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# **NAVAL POSTGRADUATE SCHOOL**

**MONTEREY, CALIFORNIA**

## **THESIS**

**HOW TERRORISM WORKS: TERRORISM AS A  
DISEQUALIZING INPUT TO THE SOCIAL SYSTEM**

by

James P. Damato

December 2007

Thesis Advisor:  
Second Reader:

Thomas H. Johnson  
James Russell

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**HOW TERRORISM WORKS: TERRORISM AS A DISEQUALIZING INPUT TO  
THE SOCIAL SYSTEM**

James P. Damato  
Major, United States Air Force  
B.A., Norwich University, 1993

Submitted in partial fulfillment of the  
requirements for the degree of

**MASTER OF ARTS IN SECURITY STUDIES  
(HOMELAND SECURITY AND DEFENSE)**

from the

**NAVAL POSTGRADUATE SCHOOL  
December 2007**

Author: Major James P. Damato

Approved by: Thomas H. Johnson  
Thesis Advisor

Second Reader: James Russell  
Second Reader

Douglas Porch  
Chairman, Department of National Security Affairs

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## ABSTRACT

This thesis uses social system equilibrium theory to answer the question *how terrorism works*. Counterterrorism policy can benefit from a systems analysis of both terrorist groups and targeted social systems. Current terrorism theory does not adequately address the broad question of how terrorism causes political-social change and is thus of limited use to counter strategic terrorist objectives. This thesis proposes the Dynamic Equilibrium Theory of Terrorism (DETT) as a social systems framework for understanding how terrorism causes change. The social system is examined as a complex living system composed of two primary components; value and environment. These two components exist in dynamic equilibrium, a homeostatic process of balance which functions to keep the system operating within normal parameters. When these components are out of balance, changes occur within the system. If the value-environment relationship is significantly out of balance, the system may enter disequilibrium, characterized by dysfunction and a high likelihood of violence.

Terrorism is a unique political weapon because it targets a social system's equilibrium in order to force change. It is a violent environmental input at immediate and recognizable odds with a system's value and as such disrupts the value-environment equilibrium. The DETT theory offered in this thesis is used to examine Al Qaeda and the attacks of 9/11. These attacks were a terrorist input that disrupted our social system equilibrium and forced changes.



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# **I. INTRODUCTION**

## **A. PURPOSE**

In the spring of 1999, Kalied Shaikh Mohammed and Osama Bin Laden met to plot the next phase of their terror campaign against America. During this Kandahar meeting, they discussed specific tactics to achieve their strategic objectives and planned the attacks that would eventually take place on September 11, 2001.<sup>1</sup> Two and a half years after that spring meeting, the ideas discussed would successfully materialize into a tremendous blow against America. These attacks would shock and confound the World's most dominant power. The events of that day had many profound impacts on us as a society.

The multi pronged Al Qaeda attack on 9/11 resulted in 3,043 deaths. Although the real cost will never be definitively known, some experts assess the economic impact of 9/11 as \$82.8-\$94.8 billion in New York City alone.<sup>2</sup> Al Qaeda actions leading up to September 11, 2001 are now well documented and the physical destruction has been cleared. Al Qaeda planning and the method of the actual attacks have been extensively studied. Our post 9/11 analysis has resulted in a deeper understanding of both Osama Bin Laden and Al Qaeda. Beyond the casualties and financial loss, that attack impacted our society in dramatic ways but do we fully understand the true long term impact of 9/11 on our society? How did this terrorism impact our society? This thesis will argue that Al Qaeda's attack of 9/11 impacted our society in many, yet unstudied ways that are also important to our theoretical understanding how terrorism works.

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<sup>1</sup> National Commission on Terrorist Attacks, *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the United States*, (New York: W.W. Norton and Company, 2004), 155.

<sup>2</sup> Comptroller City of New York, *One Year Later, The Fiscal Impact of 9/11*, (New York, 2002), <http://www.comptroller.nyc.gov/bureaus/bud/reports/impact-9-11-year-later.pdf>. (last accessed 1 July 2007).



The counterterrorism community is rightfully focused on how the attacks occurred but the academic and policy community should likewise be concerned with how terrorism influences strategic change. Law enforcement, intelligence, and military professionals need to understand how and why Al Qaeda operates so that they can better protect us against future attacks. The academic and policy community should understand how terrorism forced change in American society so that we can control the pace and types of changes in our own society. America must retain the ability to shape our own future and not relinquish this power to outside forces. This thesis will build upon existing terrorism and systems theories to propose the Dynamic Equilibrium Theory of Terrorism (DETT) to explain how terrorism works. This new theory can be used as a mental model to better understand the impacts of terrorism like 9/11 on society.

9/11 was a wake-up call for the nation. It alerted us to a threat that had been attacking us for many years. On that infamous day, Al Qaeda finally got our attention. Even for most experts in government and academia, the enemy was relatively unknown and wholly underestimated. Since the attacks, we quickly learned that our enemy was cunning, ruthless, and in some ways brilliant. They are brilliant in their ingenuity, tenacity, and strategic focus. We need to respond with equal strategic brilliance.

Our understanding of Al Qaeda as an organization and ideology is significantly better today but we still do not understand the underlying question of *how terrorism works*. Our tactical and operational counterterrorism efforts have been successful at targeting specific terrorist groups but our long term efforts to neutralize the use of terrorism have not been as productive. Only once we understand the broad theoretical problem of terrorism can we begin to defeat it or mitigate its use in a meaningful strategic way.

Some experts would argue that eliminating terrorism is an impossible goal and we should simply suffer its existence. To this argument, this thesis offers some historical examples of tactics or strategies once considered insurmountable. Civilian cities were once encircled and starved into submission. This is not a particularly useful or practiced operation or strategy today. Air to air dogfights, once the *raison d'être* for aircraft, are all but obsolete except for recruiting purposes and useless in the face of long range sensors

and weapons. Human piloted aircraft are sure to follow this trend over the next twenty years. Nuclear weapons, the most potent weapons we own, have not been unleashed in over 50 years. The simple point in these examples is that these once seemingly unconquerable tactics or dominant strategies were made ineffective and thus irrelevant. The defeat of these tactics was not achieved by destroying fighter aircraft or dismantling nuclear warheads, these problems were solved by international conventions, technology that bred irrelevance, or simply the unwillingness of a society to pull the trigger. Solutions are not immediately obvious but come with time, effort, tenacity, and a dash of brilliance. Simply accepting terrorism is not particularly brilliant and acts as an impediment to potential solutions. Terrorism in one form or another has existed throughout modern human history but its use can be rendered ineffective and thus irrelevant. As we enter the seventh year of our “long war,” new approaches to terrorism and Al Qaeda are critical to the future stability of our nation.<sup>3</sup> The dynamic equilibrium theory of terrorism that is presented throughout this thesis is a step towards that objective.

Prior to 9/11 we considered a domestic attack of that magnitude impossible. As a society, we considered ourselves safe from this type of assault. When the attack occurred, we were shocked to find a disparity between the worlds we lived in and how we thought that world should be. The attack and the shock that followed, spurred change in the American social system. As a minimum, the attacks caused us to question our historically unchallenged domestic security but in the extreme, we may be a fundamentally different society. We know that change has occurred but need to better understand how terrorism really impacts us. *This thesis will provide a possible explanation as to how terrorism forces change in social systems.*

The answer to this thesis’ primary question is rooted in well established social systems theory, that as of yet, has not been adequately applied to understanding *how terrorism works*. These existing theories are the basis for the social system dynamic equilibrium theory of terrorism, or DETT, introduced in this thesis. DETT is intended as

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<sup>3</sup> The term “long war” was coined by Defense Secretary Donald Rumsfeld in a 2006 QDR speech discussing the long term, “generational” nature of the global war on terrorism.

an analytical framework which will argue terrorism is a unique political weapon because it targets a social system's equilibrium in order to force change.

Even a great theory will not stop terrorism. It must be applied through policy to have an impact. Therefore, the goal of this paper is not only to theorize but also to operationalize these ideas. Al Qaeda still presents a significant threat to the United States and is thus the most relevant case study for analysis. This thesis will use DETT to examine the impact of Al Qaeda and 9/11 on the American system.

Al Qaeda is not just a terrorist group. It is the vanguard of a global Islamist insurgency.<sup>4</sup> It is a violent political system focused on long term change. It is a predatory system composed thinkers, leaders, fighters, suppliers, financiers, trainers, and recruiters who all function around a core ideology in pursuit of a central purpose. Members and supporters are the elements of this violent system. These components may not know each other, may not be located in the same country, nor even speak the same language but they all form a system that functions towards an objective. To attack this Al Qaeda system, we should understand both its structure and how its components function. Their violent outputs are not random or arbitrary. They are focused on achieving long term goals. Al Qaeda's goals are social-religious change and they are willing to kill or be killed to achieve it.

Terrorism is perceived by Al Qaeda to be an effective weapon. On 9/11 the terrorists successfully struck three of their four targets but these were not their ultimate objective. Al Qaeda's physical attacks are observable tactical events but are intended to further a much larger strategic objective. Their objective is to force change in our social-political system. To achieve victory against our superior military force, they must avoid concentration, use whatever weapons are available, and leverage whatever tactics are effective. Terrorism is their predominant tactic to achieve this. They hope that terrorist acts against the American system will result in our withdrawal militarily, economically, and socially from the Middle East. If they are successful, they expect to seize power and

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<sup>4</sup> Michael Scheuer, *Imperial Hubris: Why the West is Losing the War on Terror* (Virginia: Potomac Books, 2004), 66. Marc Sageman, *Understanding Terror Networks* (Philadelphia: University of Pennsylvania Press, 2004), 198.

impose their own political-religious standards on the Middle East. This is their immediate objectives but not their ultimate goal. Al Qaeda documents provide stunning evidence that once they achieve their regional objectives in the Middle East, they intend to continue the violent struggle until global Salafist rule is imposed. Our success against this enemy must be total and to do so we need to neutralize their most effective tactic, terrorism.

Since 9/11, our nation has responded forcefully and with resolve. The global war on terrorism led us to Afghanistan, the Philippines, central Asia, and now Iraq. The changes made to homeland security are monumental and our policies are much improved. Our initiatives have been operationally effective but may be strategically inefficient. The expense in American dollars and lives has been large and is growing. As the expense grows and the war continues, we must consider more efficient means of success. Despite our efforts, some argue we have exacerbated the terrorist problem, not solved it.<sup>5</sup> Islamic insurgencies have shown signs of growth in Somalia, Kenya, West Africa, Indonesian, Malaysia, Philippines, Chechnya, Kashmir, and Central Asia.<sup>6</sup> Our invasion of Afghanistan temporarily disrupted terrorist operations, logistics, and training but has not eliminated the threat or stymied the use of terrorism by our opponents. After all the effort and expense (in human and financial costs) after 9/11, groups like Al Qaeda still choose terrorism because it appears to work. We cannot fully exploit our tactical and operational counterterrorism successes until we understand the strategic how and why of terrorism. It should be a national security imperative.

To understand terrorism this thesis is founded on the position that a synthesis of systems, sociology, and terrorism theory is needed. By taking a systems approach, we can better understand how a society reacts to terrorism which is ultimately the key to understanding how terrorism works. This thesis will introduce the dynamic equilibrium theory of terrorism as a step towards this understanding and a more efficient way forward in the global war on terror. It could advance our theoretical understanding of terrorism

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<sup>5</sup> Scheuer, 139.

<sup>6</sup> Scheuer, 139.

and thus improve our long term policy. The following section will examine the research overview, objectives, and overall organization of this thesis.

## **B. RESEARCH OVERVIEW**

**1. Overview:** Terrorism is a weapon that attacks society in a unique way. The impact of 9/11 goes far beyond the physical destruction. This thesis will explore how terrorism impacts both individuals and societies in profound ways that other acts of political violence or coercion do not. Since social-political change is the terrorists' objective, understanding how change occurs within societies is pivotal to our understanding of how terrorism works.

To research this complex issue, terrorist groups and targeted societies will be analyzed as systems. As systems, both their structure and how their components function with one another determine how they operate. When examining systems such as Al Qaeda and specific social systems, we need to understand how their components interact. Just understanding the parts of Al Qaeda is important but does not lead to a complete understanding of how they operate. For example, we may have perfect clarity on who the Al Qaeda financiers are but if we do not understand how they raise and transfer funds then our understanding of the total finances of Al Qaeda are still limited. Not until we understand Al Qaeda's dynamics or how those pieces of the group function with one another can we begin to fully understand the total system. This same principle applies to social systems. We know what geography, ethnicities, religions, and demographics make up America but this does not explain America until we understand how the whole system operates. To help us understand how these specific systems operate, we can apply some general systems principles.

To explain how terrorism works, this thesis will analyze society as a complex living system. Systems like Al Qaeda and the American social system share common characteristics. This thesis will use the characteristics of general and living systems in order to understand how terrorist groups impact their targeted social system.

One common system characteristic is a tendency to maintain a steady state balance of forces which keep it functioning normally. We see this principle at work all around us. Every system reaches some balance of various forces that allows it to operate. This balance does not equate a status quo and is a dynamic changing process. Each system reaches this unique balance based on its unique structure, dynamics, and objectives. Within the Al Qaeda organization, a balance of finances, recruiting, and leadership is necessary. An imbalance of any one of these components can disrupt the system so targeting this balance can be an effective combating terrorism strategy. For example, perhaps we cannot effectively target terrorist bombers so we choose to target all the financial components of their system. If successful, we create an imbalance in their system which results in sub optimal Al Qaeda performance. To survive, Al Qaeda must make changes to compensate. This may result in new finance methods or changes in operations that require less funding. The total system is forced into change in an effort to restore a new, but functioning equilibrium of forces/components. This same principle is at work within social systems.

Societies are very complex systems. The number of components that must be simultaneously balanced is infinite compared to a simpler system such as Al Qaeda. Although these different types of systems vary in complexity, they still share similar characteristics. Social systems are also subject to this balance of forces or property of dynamic equilibrium.<sup>7</sup> A disruption in that system's equilibrium can result in system changes. Theories of social disequilibrium have been used to understand revolution but this thesis will specifically examine how terrorism helps induce an imbalance of social forces. It is this social system characteristic of dynamic equilibrium that terrorism targets.

Terrorism works by attacking this balance of forces. Understanding the social system in question, its properties, and its parameters of dynamic equilibrium can assist us in developing policy that will keep the system operating efficiently. Analyzing terrorist

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<sup>7</sup> Later in this thesis, the terms equilibrium, dynamic equilibrium, homeostasis, and steady state will be explained in greater detail. Different fields of research use these terms differently, often to explain the same general principle.

groups and societies as systems is necessary to explain how terrorism works as a tool of social change. This thesis will propose the dynamic equilibrium theory of terrorism as a useful model to explain how terrorism works.

Once this thesis explains how terrorism works to effect social change, it will examine the impact of 9/11 on the American system. America will be divided into the economic, government, and national security sub components for analysis. Data will then be compared pre 9/11, immediately after 9/11, and a few years after 9/11 in an effort to chart the general impact of Al Qaeda's attacks on our system.

The study of terrorism and social systems are both incredibly complex endeavors. Sub categories of either one of these topics could (and do) consume a lifetime of academic study. Four fundamental research propositions were used guide this research and analysis.

### **C. RESEARCH PROPOSITIONS**

Ultimately, the central question of this thesis is *how terrorism works*. The following four propositions were used to research and analyze this critical question.

1. The social system is an open system, open to exogenous and endogenous inputs which can be regulated to maintain normal system operations. Terrorism is an input to the system that cannot always be stopped but its impact on the system can be managed by controlling the system's response.
2. The social system strives for homeostatic, dynamic equilibrium which can be purposefully disrupted to create significant system perturbations. Terrorism works because it attacks this equilibrium, causing some degree of disequilibrium which in turn can result in change to the social system.
3. The social system consists of two basic elements; value and environment. The dynamic balance of these elements drives change within the social system and is fundamental to our understanding of how terrorism forces changes in some systems but not others. When change does not restore value-environment balance, pressure can build. Increased system pressure may result in increased dysfunction and more radical social change.
4. Terrorism is a system input intended to disrupt the value to environment balance and thus force change within the social system. The effectiveness and efficiency of counterterrorism policy can be improved with a deeper understanding of these social system dynamics.

Each of these propositions was used to formulate DETT as a useful mental model. Due to the complexity of this research question, the structure of this paper is important to guide the reader through the research process and the development of a new terrorism theory. The organization of this thesis is as follows.

#### **D. THESIS ORGANIZATION**

This thesis is structured into five chapters. Chapter I has introduced the general purpose, research propositions, and will now discuss this thesis' organization. Overall, it is organized to first explore a significant amount of previous work on the subject and then tread new theoretical ground. Finally, it conducts a modest test of these ideas using the attacks of 9/11.

Chapter II of this thesis will explain the methodology used and review the literature available to support this thesis' argument. Theories from various specialties will be synthesized to establish the dynamic equilibrium theory of terrorism. Chapter II includes a review of systems theory, social systems theory, and relevant terrorism theory.

Chapter III will review three theories of social change and explain in detail why equilibrium theory is the most relevant to how terrorism works. Although the initial relevance to terrorism may be unclear, these concepts are important to our understanding of how social systems operate and thus how they change. The theoretical background analyzed in Chapter III becomes the foundation for the development of DETT.

Chapter IV of this thesis will guide the reader through DETT. It will first describe the components and dynamic processes of a social system. Understanding the social system is required to determine how it will react to inputs of terrorism. Once the process of social change is clear, Chapter IV examines how terrorism acts as a catalyst for change. The roles of governments and external agents will be examined to determine the implications on future counterterrorism development. By the conclusion of this chapter, DETT will be established for use to analyze 9/11.

Chapter V will use the DETT to examine the Al Qaeda attacks of 9/11. The American social system will be divided into economic, government, and national security



subcomponents for analysis. Each one of these subcomponents will be examined to determine the change that has occurred as a result of 9/11. Each one of these sub component equilibriums will then be combined to determine overall system equilibrium, system changes, and thus the impact of 9/11.

## **II. METHODOLOGY AND LITERATURE REVIEW**

### **A. OVERVIEW**

This chapter will explain the methodology and existing literature used in this thesis. Methodology is the process used to research, analyze, and draw conclusions. The literature review is important to highlight existing work in various fields relevant to this thesis. Upon conclusion of this chapter, the reader should understand the methodological process, systems concepts, basic social systems theory, and terrorism theories used throughout this paper.

### **B. METHODOLOGICAL APPROACH**

The methodology used in this thesis is a systems dynamics approach to the study of terrorism and its impact on society. To understand the impact of terrorism on society we first have to understand both as systems.

This thesis is not focused on a specific characteristic or definitional element of terrorism. It is focused on the broader phenomena of terrorism. This literature review will examine some definitions, elements, and general terrorism theories only as a background to frame the rest of this thesis. A “systems dynamics” approach was adopted to analyze two diverse and very complex themes; terrorism and society.

A research design process was used to guide the research and analysis. This design included seven steps. These steps were; describe the problem, describe the systems at work, identify major elements of the system, postulate the system’s structure and dynamics, develop a theory/model, evaluate the model, and finally to communicate the results and conclusions.<sup>8</sup>

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<sup>8</sup> These eight steps are a modified version of the nine “steps in modeling process” presented by Professor Thomas H. Johnson, during course NS4805 Modeling Terrorism: New Analytical Approaches, Naval Postgraduate School, Monterey, California, Summer 2007.

**1. Describe the problem:** The problem is discussed at length in Chapter I. In summary, our counterterrorism policy can be improved by a more thorough understanding of how terrorism works and thus why it is chosen as a tool for social change. Current terrorism theory is useful but does not adequately address the systemic impact of terrorism on society. This thesis intends to research, analyze, and synthesize several theories to establish a new theory of how terrorism works. This thesis will propose and test the Dynamic Equilibrium Theory of Terrorism (DETT).

**2. Describe the systems at work:** To determine how terrorism works, it was first necessary to understand the social system targeted by terrorism. This is the uniqueness of this thesis. It attempts to analyze terrorism as an output from one system and then an input to another. To do this, society and terrorist groups are both examined as systems. This chapter will spend some time reviewing systems theory and the characteristics of living systems.

**3. Identify major elements of the system:** Each system's structure has significant impact on how it functions. It is therefore important to first define boundaries of the system in question. Once the system is bound, then the individual components and sub systems can be identified.

**4. Postulate the system's structure and dynamics:** Past theory is used here extensively to posit what the actual social system looks like and how it acts. This paper examines and adopts certain system dynamics critical to our understanding of terrorism as a social input. Specifically, equilibrium theory in social systems and the value-environment construct of societies form the theoretical basis of DETT. Both of these system properties will be dealt with at length in Chapter III and IV.

**5. Develop a theory/model:** A model is a simple representation of reality. A good model can help us simulate or at least think critically about real complex systems and interactions. This thesis builds upon existing social system theory, terrorism theory, and a simple but eloquent model of revolution put forth by Chalmers Johnson. These ideas are synthesized and expanded upon to derive the Dynamic Equilibrium Theory of Terrorism (DETT). DETT is a mental model that explains how terrorism works.

**6. Evaluate model:** DETT is offered to the academic and policy community as a useful model with utility for future research and policy development. The new theory will then be used to examine Al Qaeda and the attacks of 9/11. The model will be used to examine how those attacks impacted the American social system.

**7. Communicate results and conclusions:** The conclusions will summarize the findings of this thesis. Due to the broad scope of this thesis it was not possible to explore all the nuances of the subject or deal with all the questions that arose. Therefore, the final chapter also includes some of the important but unanswered questions that remain for further research.

The above seven steps were used to structure this research and analysis. The process began with an extensive literature review. This literature review provides the reader with some of the basic theoretical pillars necessary to support arguments made later in this thesis.

## **C. LITERATURE REVIEW**

The following literature review is divided into three major sections; systems theory, social system and social change theory, and terrorism. A review of these three disciplines was needed to support the propositions of this thesis. There are abundant publications focused on all of these subjects but few that examined terrorism from a sociological perspective. For various reasons, social theory has not been sufficiently applied to help us understand terrorism. As noted by Bergesen and Lizardo, “At present there is little sociology of terrorism, whether in the form of theory or research.”<sup>9</sup> If terrorism is fundamentally about coercing social-political change, then sociology should play a major role in our understanding of it. This thesis is an attempt to understand terrorism as an input into the larger living social system. Answers to this thesis’ primary questions lie in a synthesis of these various disciplines and theories.

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<sup>9</sup> Albert J. Bergesen and Omar Lizardo, “International Terrorism and the World System,” *Sociological Theory* 22 (2004): 38.

#### D. SYSTEMS THEORY

Systems theory is a multidiscipline approach to studying a wide range of complex bodies such as living organisms, machines, organizations, and human societies.<sup>10</sup> It is increasingly becoming a valuable tool in social sciences and can help us understand terrorism. It has been successfully used to study specific conflict and specific terrorist/insurgent groups but little existing literature could be found that directly examined terrorism as an input to the social system.

Since systems theory is concerned with how various components and sub systems interrelate and operate towards some unifying purpose, we can utilize it to dissect both terrorist groups and a targeted society to understand how they function. This thesis uses a systems approach to move beyond the study of individual terrorist groups and examine how the input of terrorism impacts our social system.<sup>11</sup>

There is significant work which applies general systems principles in the social sciences. Deutsch, Kaplan, Katz, Kahn, McClelland and others have applied systems theory to international relations, politics, and organizational behavior which could be utilized in our evolving understanding of terrorism.<sup>12</sup> Throughout the study of systems, certain common characteristics of all systems have been identified. These common characteristics are the first step to understanding specific systems such as Al Qaeda and the American social system it targeted on 9/11.

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<sup>10</sup> The two predominant sources utilized throughout this thesis are Ludwig Von Bertalanffy, *General Systems Theory: Foundations, Development, Applications* (New York: George Braziler, 1969) and James Grier Miller, *Living Systems* (New York: McGraw-Hill, 1978).

<sup>11</sup> A deep body of systems theory literature covers many fields of study. For example, see: Kenneth Boulding, "General System Theory—The Skeleton of Science," *General Systems; Yearbook of the Society for the Advancement of General Systems Theory*, (1956). Kenneth Boulding, *Conflict and Defense: A General Theory* (New York: Harper, 1962). C.W Churchman, *The Systems Approach* (New York: Lural, 1968). E. Laszlo, *Introduction to Systems Philosophy; Toward a new Paradigm of Contemporary Thought* (San Francisco: Harper, 1972).

<sup>12</sup> Karl Wolfgang Deutsch, *The Nerves of Government: Models of Communication and Control* (New York: Free Press, 1963). Daniel Katz and Robert L. Kahn, "Organizations and the System Concept; The Social Psychology of Organizations" in *Classics of Organization* (New York: John Wiley and Sons, 1966).

**1. General Systems Theory.** Ludwig Von Bertalanffy described general systems theory as the scientific exploration of “wholeness.”<sup>13</sup> Instead of studying individual components, systems theory is concerned with studying all the components, sub systems, and how they operate together.

Even simple systems are made-up of many components that serve specific purposes. For example, in Al Qaeda members have specific roles. They need operatives to conduct attacks and leadership to set a strategic direction. They need recruiters to keep an influx of new recruits, financiers, supply personnel, explosive experts and so on. The Al Qaeda system is also composed of training bases, safe houses, weapons, equipment, web sites, and even ideology. All of these components perform specific functions that when combined together form a functioning system.

Al Qaeda outputs a radical political view and violence to achieve its objectives. If the components of Al Qaeda were separated and examined in isolation, you may learn a lot about the individual components, but not much about the system as a whole. No individual, computer, operative, or weapon can produce terrorism or spread ideology. It takes several of these components working together. To understand such complex problems, we should study the entire system instead of its individual components.<sup>14</sup> For example, in counterterrorism, the isolated study of explosives or Osama Bin Laden may be useful but does not give us a complete understanding of the terror group. A more holistic, total systems analysis of the problem is required.

Systems theory is concerned with how these various components and sub systems interrelate or function towards some unifying purpose - a system’s dynamics. Ervin Laszlo summarizes this notion in the following way: “complex phenomena proved to be more than a simple sum of the properties of isolated causal chains, or of the properties of their components taken separately. Such phenomena must be explained not only in terms of their components, but also in regard to the entire set of relations between

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<sup>13</sup> Bertalanffy, xx.

<sup>14</sup> Bertalanffy, 9.

components.”<sup>15</sup> Systems theory is beneficial to our study of complex, often hidden components and sub systems that exist throughout both society and terrorism. For purpose of this thesis, we are primarily concerned with the dynamic relationship between the components of a society (bounded as a system) and how the overall system reacts to inputs of terrorism. For example, examining the immediate economic impact of 9/11 is important, but it is only a small piece of the larger puzzle. More telling would be a 9/11 analysis that studied the long range economic impact on trade, which in turn impacted immigration, which further impacted domestic electoral politics. Because of the overwhelmingly complex nature of some systems, general characteristics of systems are an important starting point.

Bertalanffy focused his general systems theory on common laws that could be applied to systems across all fields of study, including social systems. In addition to the actual study of general system properties, this approach facilitates a cross flow of information or advancements between specializations. Since advanced studies in different academic fields of study are highly specialized, they tend to be studied in isolation. General system theories are a way to bridge the gaps between these various fields of study. This is especially important in bridging the gap between the abstract and the concrete studies. Certain fields of study such as biology and mechanical engineering are clearly observable in the physical world while other more abstract fields of study, such as sociology or political science are often difficult to observe or prove in a concrete way. Therefore, a systems approach can help us to apply abstract concepts such as sociology and terrorism theory to the concrete world. This approach is known as “systems thinking.”<sup>16</sup> The first important characteristic of systems that impacts our study of terrorism is that they are either open or closed.

Closed systems are isolated from external or exogenous input. A closed system also outputs nothing. A perfectly closed system would have to exist in complete isolation from any external inputs. Although it cannot exist in its truest sense, the term is still used

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<sup>15</sup> Ervin Laszlo, “The Origins of General Systems Theory in the Work of Von Bertalanffy,” in *The Relevance of General Systems Theory*, ed. Ervin Laszlo (New York: George Braziller, 1972), 5.

<sup>16</sup> Peter Checkland, *Systems Thinking, Systems Practice* (Avon: John Wiley and Sons, 1981), 3.

to describe relatively closed or isolated systems. An isolated tribal social system that is not influenced by any contact with modern society could be described as a closed social system. Without external stimulus, change may be slow. Conversely, open systems receive inputs from outside the system and are therefore influenced by external factors. These external influences may be from the environment or other systems. The American social system is a very open system that is exposed to countless numbers of inputs at any given time. Terrorism is one of these external inputs.

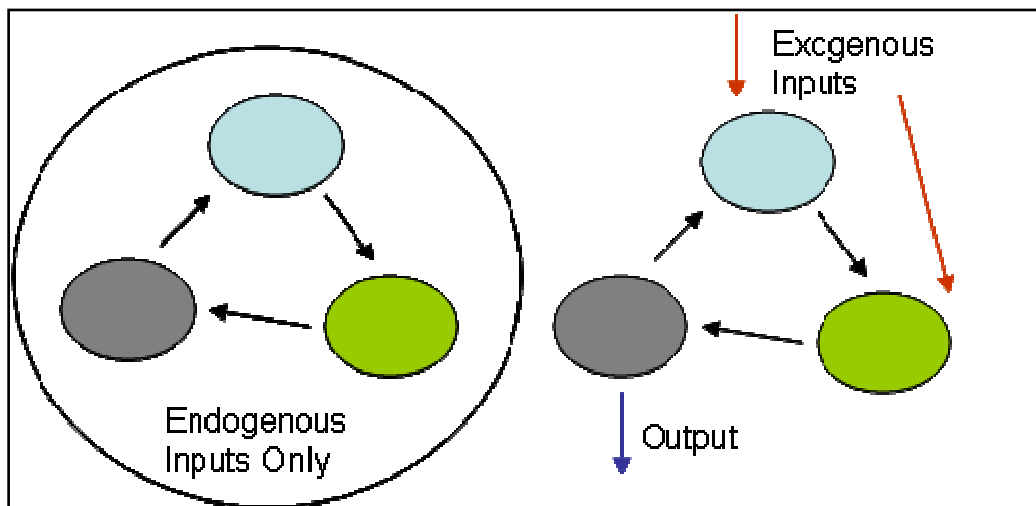


Figure 1. Closed versus Open System

In reality, our entire world is a highly complex series of interwoven open systems. Each open system receives inputs, has internal processes, and sends outputs. In many cases we cannot see or collect data on all of the system's components and interactions which complicate a study of that system. In this case, models and simulations become useful.

Since open systems are interconnected, we must make an analytical choice as to where one system begins and another ends. One of the first tasks in systems analysis is to define the boundaries and identify the system's various pieces. For example, if we were studying a specific terrorist group, would active supporters be part of our system? Perhaps we decide that for purposes of our analysis; terrorist systems are defined only by



hard core operators and active supporters are outside the boundaries of the system. Do passive supporters, weapons dealers, money handlers, terrorist family members exist within or outside the system? All these questions are important to defining the boundaries of the system.

**2. Living Systems Theory.** Systems can also be classified as either living or non living systems. James Grier Miller, in his prolific *Living Systems* puts forth a unifying theory of living systems that can be a valuable tool in examining terrorism. In this work, he defines living systems as complex systems that carry out “living processes.”<sup>17</sup> This not only includes obvious living organisms such as plants and animals, but also applies to collective organisms such as terrorist groups, counterterrorism organizations, and societies in general. Miller effectively argues that societies are living systems and thus bound by certain living system characteristics.<sup>18</sup> These characteristics become important to our ultimate understanding of terrorism. Miller lists nine common characteristics of all living systems of which two are of primary concern to this thesis.<sup>19</sup>

**a. Open.** All living systems are open. Since they are open, living systems receive inputs, have throughputs (or processes), and outputs. As discussed above, open systems are impacted by and potentially impact their external environment, including other systems. Open systems can be infinitely connected to external systems and influences. Both terrorist groups and social systems are open systems. They require inputs to survive and grow. Without inputs they die. It is exactly this necessity for input that also makes them vulnerable to outside influence. A relatively closed social system is more secure but not necessarily healthier. A more open society such as the United States is more susceptible to inputs, both beneficial and negative. Our openness is strength but can also be a weakness.

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<sup>17</sup> Miller, 1.

<sup>18</sup> Miller, 18.

<sup>19</sup> Miller identifies nine characteristics common to all living system in *Living Systems*, page 18. Only Miller’s first two characteristics are specifically mentioned here, as they are central to the remainder of this thesis.

**b. Steady State.** Living systems must maintain a steady state of productive forces that counters the natural break-down and decay of matter. This inevitable decay of all matter is known as entropy. Based on the laws of thermodynamics, entropy is unavoidable and results in an eventual disorganization of matter into nothing. However, entropy in living systems can be countered by negative entropy or negentropy. This is the addition of energy and organization to the system at a rate that exceeds disorganization or lost energy (entropy). A system whose energy gain does not exceed its loss is in a state of entropy and will eventually cease to exist. In the case of living systems, if there are no negentropic inputs such as food or water, the system will die. Take for example a terrorist group. To survive, they need negentropic inputs such as new recruits or supporters. Even the best terrorist cannot evade the passage of time and will eventually die. Without new followers, the group will simply cease to exist. While counterterrorism efforts try to slow or stop these positive inputs (recruitment, profits, and supplies), they also simultaneously focus on increasing negative energy inputs such as killing and capturing the terrorists that already exists.

According to Miller, it is a characteristic of living systems to naturally achieve a “steady state” balance of productive, life sustaining forces to counter entropy. Bertalanffy echoes this concept and states that “living systems, maintaining themselves in a steady state, can avoid the increase of entropy, and may even develop towards states of increased order and organization.”<sup>20</sup> This characteristic of living systems to maintain a steady state of negentropy is not static. It is a dynamic process of change. *Change is thus a natural and continuous process to counter entropy.* Healthy living systems tend to reach a steady or balanced state operation.

This concept is important to understand our own society. According to Miller societies and terrorist groups are in a constant state of decay but compensate by bringing in new resources, ideas, people, etc. The level of growth needs to exceed the level of decay to survive or grow. Conversely, if they grow or change too fast, the society or group could be overwhelmed with change without sufficient time to adjust causing

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<sup>20</sup> Bertalanffy, 41.

fragmentation. The critical point here is that societies have a natural tendency to achieve a healthy balance or steady state of all these forces. When they do not, a society either dies or changes too rapidly to adapt. A balance of forces or equilibrium process is critical to normal operations and even the survival of social systems.

This thesis cannot explore all of Millers' prolific work but is used here to characterize social systems and terrorist groups as open living systems which tend to naturally achieve a steady state of forces necessary for survival. Terrorist groups are living systems that exhibit the same characteristics as other living systems. These characteristics can become vulnerabilities if they are recognized and leveraged by counterterrorism policy. Likewise, societies are also living systems who share these characteristics which can become vulnerabilities. Understanding these living system characteristics of openness and steady state are important to understanding how terrorism works.

## **E. SOCIAL SYSTEM AND SOCIAL CHANGE THEORY**

There is a rich body of sociology literature that addresses the composition and functioning of social systems. Chapter III will deal with this subject in more detail but an overview is useful at this point.

**1. Social Change.** Richard Appelbaum's *Theories of Social Change* provides an excellent overview of conflict theory, evolution theory, and equilibrium theory of social change.<sup>21</sup> The conflict and evolutionary theories of social change will be reviewed and discussed but are not central to this thesis. Equilibrium theory is critical to understanding how terrorism works and as such will be explored in depth.<sup>22</sup> The equilibrium theory of social change essentially states the same concept as Miller and Von Bertalanffy's "balance of forces." The Dynamic Equilibrium Theory of Terrorism (DETT) explained in Chapter IV is grounded in these concepts so a short review of equilibrium theory is necessary here.

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<sup>21</sup> Richard A. Appelbaum, *Theories of Social Change* (Chicago: Markham Publishing Company, 1970), 65-79.

<sup>22</sup> Appelbaum, 15-43, 81-97.

**2. Structural-Functionalism.** Systems thinking was used by Emile Durkenheim to analyze society before it had been conceived of as a separate field. Durkenheim's structuralism was the genesis for modern structural-functionalism which examines societies as systems. It is Durkenheim's work that sparked Talcott Parsons' early equilibrium theory and is thus relevant throughout this thesis. Talcott Parsons is the primary sociology source used throughout this thesis.<sup>23</sup> Modern sociologists have advanced some of these structural-functions principles and developed a newer niche of Parsonian theory known as neofunctionalism. Key authors within neofunctionalism are Jeffrey C. Alexander and Paul Colomy.<sup>24</sup> Neofunctionalists such as Gould and Lehman believed that Parsons' original notions of equilibrium were too strict and did not allow for structural changes when a system is outside of equilibrium.<sup>25</sup> These sociologists have established a theoretical foundation for social system equilibrium theory that this thesis will use to explain how terrorism leverages dynamic equilibrium to drive changes within social systems.

As in Miller's notion of steady state, systems such as societies and terrorist groups tend to achieve a balance or dynamic equilibrium so they can operate within normal parameters. This dynamic equilibrium hypothesis has been used by past theorists in multiple disciplines to explain actions within social systems, international relations, and organizational behavior.<sup>26</sup> Early sociology equilibrium theory has also been used in modern political violence thought. An understanding of this general principle is

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<sup>23</sup> Talcott Parsons and Edward A. Shils, *Toward a General Theory of Action* (New York: Harper & Row, 1951). Talcott Parsons, *Action Theory and Human Condition* (New York: Free Press, 1978). Robert G Perrin, "The Functionalist Theory of Change Revisited," *The Pacific Sociological Review* 16:1 (1973): 47-60.

<sup>24</sup> Jeffrey C. Alexander and Paul Colomy, "Neofunctionalism Today: Reconstructing a Theoretical Tradition" in *Frontiers of Social Theory; The New Syntheses*, ed. George Ritzer (New York: Columbia University Press, 1990). Jeffrey C Alexander and Paul Colomy, "Towards Neofunctionalism: Eisenstadt's Change Theory and Symbolic Interaction," *Sociological Theory* 2 (1985): 11-23. Jeffrey. C Alexander, *Neofunctionalism* (Beverly Hills: Sage Publications, 1985). Paul Colomy, "Recent Developments in Functionalist Approach to Change," *Sociological Focus* 19 (1986). Paul Colomy, *The Dynamics of Social Systems* (Newbury Park: Sage Publications, 1992).

<sup>25</sup> Niklas Luhman, "The Paradox of System Differentiation and the Evolution of Society," in *Differentiation Theory and Social Change: Comparative and Historical Perspectives*, ed. Jeffrey C. Alexander and Paul Colomy (New York: Columbia University Press, 1990).

<sup>26</sup> Talcott Parsons and Edward A Shils, *Toward a General Theory of Action* (New York: Harper & Row, 1951).

necessary to understand how terrorism leverages that system characteristic to drive change. Chapter III will deal extensively with this notion and use it to support this thesis' central question.

**3. Equilibrium in Political Violence Theory.** There are several political violence studies which acknowledge the importance of equilibrium. This thesis builds heavily upon these works. Chalmers Johnson in his *Revolutionary Change* proposes that social disequilibrium is a necessary condition for revolution.<sup>27</sup> In his analysis of revolutionary war, Johnson presents a simple social system model that consists of two elements; the “values” and “environment.” These two components operate in a homeostatic balance or equilibrium.<sup>28</sup> Johnson contends that when values and environments are not in balance, disequilibrium occurs. This imbalance or disequilibrium is necessary, although not sufficient, for revolution.<sup>29</sup> Johnson's simple social system model will be the basic social system model which this thesis will expand upon.

Similar logic is found in Ted Robert Gurr's *Why Men Rebel*.<sup>30</sup> In his treatise on Relative Deprivation (RD), Gurr focused on the individual and group causation of political violence. He acknowledges that Johnson's idea of a social equilibrium (balance between a system's value and environment components) may be the same general principle as his RD but at a different level of analysis.<sup>31</sup> At the individual level, Gurr argues that friction is created when value capabilities do not meet with an individual's value expectations. If this friction reaches a certain point, violence may occur. If we apply Gurr's RD hypothesis at the system level, then balance between our values (the way the world should be) and the environment (the way the world is) creates societal friction that may result in violence. This thesis will not argue that system level RD is

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<sup>27</sup> Chalmers Johnson, *Revolutionary Change* (Stanford: Stanford University Press, 1983), 41-60.

<sup>28</sup> Johnson, 41-60.

<sup>29</sup> Johnson, 41-60.

<sup>30</sup> Ted Robert Gurr, *Why Men Rebel* (New Jersey: Princeton University Press, 1970), 139.

<sup>31</sup> Gurr, 139.

causal to political violence but is referenced here simply to demonstrate that a foundation for this value-environment dynamic already exists within political violence theory.

Gurr's RD hypothesis is primarily concerned with why and when violence occurs. While Gurr postulates that violence can occur in a society because of friction, this thesis is more concerned with the structural and functional impact of terrorism on the system and why it has the impact that it does. The next section of this literature review will examine some of the major terrorism theories and arguments.

## **F. TERRORISM**

**1. Terrorism Theory.** The volume of terrorism analysis has grown exponentially since Sept 2001. This section cannot examine all of the existing terrorism literature but instead offers a review of the more important thoughts and arguments relevant to this thesis. Much of this work is an important contribution to a critical national security issue but has not led to a consensus regarding how terrorism works. Many disagreements and unknowns still exist in the area of terrorism theory. These disagreements revolve around conflicting definitions, whether environmental or psychological factors are causal, or if terrorism actually works.

While we grapple with these important issues, the use of terrorism is on the rise. The National Counter Terrorism Center (NCTC) reported that approximately 14,000 terrorist attacks occurred globally in 2006. This includes Iraq and resulted in approximately 20,000 deaths. 45 percent of these fatalities, about 6,600 occurred in Iraq.<sup>32</sup> Even if you exclude Iraq, still 13,400 people were killed by terrorism in 2006. This is a significant increase in contrast from only 3,000 attacks and 6200 terrorist fatalities, excluding Iraq, in 2005. Terrorism is increasingly being seen as an effective weapon. Its popularity is growing despite our mammoth efforts to understand and counter it.

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<sup>32</sup> National Counter Terror Center, "Report on Terrorist Incidents – 2006, 30 April 2007," National Counter Terror Center, <http://wits.nctc.gov/reports/crot2006nctcannexfinal.pdf>. (accessed 5 September 2007).

**2. Terrorism Definitions.** The public use of the term continues to morph over time and is routinely changed by different users for political, commercial, or legal purposes. The word itself has become so broadly used in various contexts that it has no clear meaning. The media further complicates the issue by using the term terrorism for just about anything they wish to sensationalize.<sup>33</sup>

While the public understanding of terrorism is murky, there is some growing consensus as to the general elements of terrorism. There are hundreds of terrorism definitions in use but for purposes of this paper, we will start this section with a very simple definition based on the most widely accepted elements. This definition will most likely be wholly unsatisfying to any serious student of terrorism but will be built upon throughout this paper. Terrorism is a tactic that uses illegal violence or the threat of violence to coerce or force political change. Political change is inherently social change. This definition can be argued *ad infinitum* but it is offered here only to establish a starting point. It noticeably lacks several common elements present in other terrorism definitions such as violence directed against non combatants or governments. This will be discussed later in this section. The following section of this literature review will review only a few of the most widely accepted terrorism characteristics and theories.

**3. Existing Terrorism Analysis.** A contributing factor to the lack of theoretical consensus may be partially a result of the way terrorism has been analyzed. Acts of terror or terror groups are analyzed and compared to develop overarching theories. This has resulted in the study of isolated pieces of the puzzle without sufficient consideration given to the larger complex system or its dynamics. This has resulted in theories and propositions that are valid for some conflicts and groups but are not applicable to others. Applying these existing terrorism theories to different environments, in dissimilar systems, over different time periods has proved to be problematic. Much of the existing analysis is useful when studying similar conflicts in similar environments but has not led to a definitive understanding of the broader problem. Thus, existing terrorism analysis is difficult to apply when building policy that must be

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<sup>33</sup> Gabriel Weimann, *Terror on the Internet; the New Arena, the New Challenges* (Washington D.C.: United States Institute of Peace Press, 2000), 152-153.

effective in different regions, conditions, against different groups, conflicts, and over a long period of time. Each society and terrorist group is a unique system and cannot be dealt with using a generic policy.

**a. Political, Violence, or Threat of Violence.** The terrorism analyst, Bruce Hoffman describes three major components of terrorism when he described it as violence or a threat of violence in pursuit of a political aim.<sup>34</sup> This political element is a fundamental and perhaps the most widely accepted component of all terrorism definitions. Political motivations are what distinguish terrorism from other violent crimes. Terrorism is a form of political violence and thus a weapon of social change. It is ultimately about using illegal violence to coerce social change. This coercion can be accomplished by actual violence or just the threat of violence.

**b. Strategic Choice.** Terrorism is a planned, calculated, and systemic act.<sup>35</sup> It is a tactic but its continued use may be in the pursuit of strategic objectives. One of today's most highly regarded terrorism theorists, Martha Crenshaw, explains that terrorism is often a strategic choice.<sup>36</sup> She posits that terrorism is a rationally calculated choice of means to achieve an objective. Radical organizations seeking political change select "terrorism as a course of action from a range of perceived alternatives."<sup>37</sup>

Additionally, Robert Pape's noteworthy book, *The Strategic Logic of Suicide Terrorism* illustrates this same notion.<sup>38</sup> Pape studied suicide terrorism events from 1980 through 2003, creating a database of 315 attacks. This data was analyzed and used to support several very important terrorism insights. The first of Pape's five principal findings is that suicide terrorism is strategic. Although the act may appear irrational to

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<sup>34</sup> Paraphrased from Bruce Hoffman, *Inside Terrorism* (New York: Columbia University Press, 1998), 14-15.

<sup>35</sup> Hoffman, 15.

<sup>36</sup> Martha Crenshaw, "The Logic of Terrorism," in *Origins of Terrorism*, ed. Walter Reich (Washington, D.C.: Woodrow Wilson International Center for Scholars, 1998), 7-24.

<sup>37</sup> Crenshaw, 8.

<sup>38</sup> Robert A Pape, *Dying To Win: The Strategic Logic of Suicide Terrorism* (New York: Random House, 2005).



us, suicide terrorism occurs as part of a larger campaign to achieve a specific political goal.<sup>39</sup> His work concludes that even the most self-destructive form of terrorism, suicide bombings, still follows a strategic logic.

Terrorism is a tactic. A tactic cannot be defeated like an enemy combatant, but it can be countered. As suggested in the introduction, tactics such as air to air dog fights and starving cities are examples of tactics that have been largely countered. They could still be used but are generally considered obsolete or ineffective. We are not at war with the tactic of terrorism but we are at war with individuals and groups who choose terrorism as a means to achieve social change. To effectively counter this tactic we must understand why it was chosen, what its intended effects are, and how those effects may or may not come about. Terrorism may be used if it offers tactical and strategic gain.<sup>40</sup> That is not to say that everyone who perceives a tactical gain through the use of terrorism will adopt it. In fact, most social change is non violent. Even those who do choose political violence will most likely not resort to terrorism, but those who do choose terrorism believe it will work.

**c. Psychological Forces.** Although there is growing consensus that terrorism is a choice of means, other notable theorists disagree. Alternative views such as Gerald Post's "psycho-logic" must at least be considered.<sup>41</sup> Post believes that terrorism is partially a product of psychological forces and argues that individual "psycho-logic" drives terrorism.<sup>42</sup> Terrorism is a justification to commit violent acts which certain individuals and groups are psychologically prone to commit.<sup>43</sup> This is a critical distinction that should not be overlooked by policy developers. If terrorism is rooted in individual and group psychological dispositions towards violence, the policies required to

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<sup>39</sup> Robert A Pape, "The Strategic Logic of Suicide Terrorism," *American Political Science Review* 97:3 (2003), 343.

<sup>40</sup> Crenshaw, 7-24.

<sup>41</sup> Jerald M. Post, "Terrorist Psycho-Logic: Terrorist Behavior as a Product of Psychological Forces" in *Origins of Terrorism*, ed. Walter Reich (Washington, D.C.: Woodrow Wilson International Center for Scholars, 1998), 25-40.

<sup>42</sup> Post, 25-40.

<sup>43</sup> Post, 25.

combat it would be far different than if terrorism is a strategic and mostly rational choice. Terrorists who are rational actors and not psychologically predisposed to violent acts can be reasoned with. In this case, policy makers may pursue negotiations to end terrorism. Undoubtedly, each person's individual psyche has some bearing on the choices we make giving some credibility to Post's argument. Although the psycho-logic argument is worthwhile to understand terrorism at the individual level, this thesis is concerned more with a systems analysis of terrorism and societies. For purposes of this thesis, we are not addressing why individuals become terrorists. This "psycho-logic" and "strategic-choice" argument illustrates just one of the many theoretical debates surrounding terrorism.

**d. Communicative Tool.** In addition to its destructive power, terrorism is also a communicative tool. A single attack can simultaneously serve the specific act of destruction, coerce a target audience, and act to propagate a message.<sup>44</sup> Terrorism is considered unique from other forms of political violence because it influences an audience by inducing fear. Even if the physical damage or violence of terrorism is limited, the impact on a society can be widespread. Due to this, acts of terrorism can have the capability of discrediting governments or security forces charged with protecting the public. Juergensmeyer also refers to religious violence as "performance violence" because it is symbolic, dramatic and theatrical but mostly does little actual harm.<sup>45</sup> This is an accurate description of most terrorist acts and their impact. As will be discussed later in this paper, these violent performances are acts intended to attack the public sense of normalcy while the actual destruction caused is of secondary importance. Juergensmeyer also notes that as performance, it is the audience that gives the terrorist an almost celebrity status. The audience gives their actions "an illusion of importance."<sup>46</sup>

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<sup>44</sup> Pape, 347.

<sup>45</sup> Mark Juergensmeyer, *Terror in the Mind of God: The Global Rise of Religious Violence*, 3rd Edition (Berkeley: University of California Press, 2003), 127.

<sup>46</sup> Juergensmeyer, 128.

e. **Illegal and Legitimate Uses of Force.** Terrorism is illegal. There are no national or international laws that condone terrorism. It is illegal but various legal bodies have defined it differently. As a result, terrorism is a universally illegal act but has no clear set of internationally accepted elements which define it. As a global community, we know we do not like it but can not agree on exactly what it is. Regardless of the definitional ambiguity, being universally illegal is important to our defining terrorism. Using illegality as a standard to define terrorism is especially useful to overcome another reoccurring theoretical problem of defining terrorism... the target.

Some terrorism definitions stipulate that violence must be directed against civilians or non combatants in order for that act to be classified as terrorism. As an example, the National Counterterrorism Center (NCTC) will only include acts of terrorism in their database if political violence is directed at “non combatants.”<sup>47</sup> Conversely, other terrorism definitions specifically exclude any mention of the target. For example, the Department of Defense defines terrorism as the “calculated use of unlawful violence or threat of unlawful violence to inculcate fear; intended to coerce or to intimidate governments or societies in the pursuit of goals that are generally political, religious, or ideological.”<sup>48</sup> Defining terrorism based on the target set is troublesome specifically because of the question of legitimacy.

One of the challenges in defining terrorism is setting a standard that accurately labels terrorism but also accounts for the legitimate uses of force. Political violence may be legitimate against certain targets under certain circumstances. When that use is or is not legitimate, is highly subjective. It would be academically easier to classify all violent political acts as illegal but the law must also outline the legitimate use of such force. Healthy societies depend on the law to define both the government and an individual’s right to use force under certain circumstances. Each party of a conflict will undoubtedly define combatant, non combatant, legitimate, and illegitimate targets differently. Any

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<sup>47</sup> National Counterterrorism Center: Annex of Statistical Information, “Country Reports on Terrorism-Report Home Page,” Office of the Coordinator for Counterterrorism, <http://www.state.gov/s/ct/rls/crt/2006/82739.htm> (accessed 5 September 2007)

<sup>48</sup> Joint Electronic Library, “Terrorism,” DoD Dictionary of Military and Associated Terms, <http://www.dtic.mil/doctrine/jel/doddict/data/t/05466.html>. (accessed 12 June 2007).

definition of political violence that does not account for legitimate force to protect sovereignty or defend against oppression is an unusable definition. For this reason, the type of target should not be used as a critical element to define terrorism. Instead, defining terrorism as illegal allows application of various local or international standards that are designed to govern actions in a specific time and place. Since laws are established in social context to determine the legitimacy or illegitimacy of certain uses of force, they are a more effective element to defining terrorism.

These are just some of the elements used to define terrorism. Dozens of other definitional criteria are sometimes used and most of these are frequently debated. Our terrorism discussion will now move on to theories of terrorism relevant to this thesis.

**f. Waves of Terrorism.** Terrorism is inextricably linked to the political and social situation of its time. In 2001, David Rapoport proposed a brilliant theory that terrorism evolves in waves, largely corollary to the politics and technology of the period.<sup>49</sup> These waves or “cycles of activity in a given time period” are largely defined by the ideology or “energy” that drove each of those eras.<sup>50</sup> Rapoport distinguishes the first three waves as; the “Anarchist wave” which lasted until 1920, the “Anti-Colonial wave” which mostly ended around 1960, and the “New Left wave” which mostly died out around 1979 although there are still some remnants lingering today. These waves of terrorism assumed a personality that followed the doctrine and technology of the time. This theory reinforces the notion that both terrorism and societies are interconnected systems which impact one another’s evolution. Although Rapoport did not use systems analysis, he does refer to the life cycles of terrorist groups, likening them to living systems. As the world evolves politically and socially it impacts the personality of terrorism. In turn, terrorism impacts political and social evolution. His fourth wave, which we are currently experiencing, is the “religious wave” of terrorism.

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<sup>49</sup> David Rapoport, “The Four Waves of Modern Terrorism,” in *Attacking Terrorism*, ed. Audrey Kurth Cronin and James Ludes (Washington, D.C.: Georgetown University Press, 2004), 46-73.

<sup>50</sup> Rapoport, 47.

**g. Religious terrorism:** Terrorism is on the rise and so is its association with religion. Mark Juergensmeyer's *Terror in the Mind of God* is the foremost work that tries to understand the rise of religious terrorism. Although this paper is not focused on the specific motivations of individuals, religious terrorism is a powerful motivator of modern terrorists and must at least be mentioned. Religion is sometimes a complimentary factor and sometimes it is the sole motivation, justification, organization, and world view behind terrorism. Although most of us would like to think of religion as peaceful, there is a historical attraction between religion and violence.<sup>51</sup> The use of violence to achieve religious objectives is not new, but religion has increasingly supplied the ideology and the organizational structure for modern terror.<sup>52</sup> Although this thesis is not focused on individual motivations, religion and specifically Islam are important factors as we examine Al Qaeda and the attacks of 9/11. Additionally, terrorism in the name of religion may have greater impact on the targeted society than an equivalent level of secular violence does. Americans do not expect religion to be violent and as such are surprised when it is. Terrorism may be more effective at creating social disequilibrium if framed in religion.

**h. Terrorism in Revolution.** Aside from the volumes of pure terrorism research, lies a rich body of revolutionary warfare material that at least partially addresses terrorism. Since these works focus on terrorism only in the context of a revolutionary war, they tend to view terrorism as a side issue to social political change. They generally viewed terrorism's primary purpose as to force popular discontent with the government. The most influential work to this thesis is Chalmers Johnson's *Revolutionary Change* mentioned earlier. This work will be discussed frequently throughout as it offers the value-environment construct used as the basis for DETT. Johnson viewed revolutionary terrorism as a tactic or strategy that "uses violence against insignificant people in order to affect the behavior of significant people or their supporters."<sup>53</sup> He viewed terrorism as a tactic often adopted in order to turn an already disequalized system into a revolutionary

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<sup>51</sup> Juergensmeyer, 5.

<sup>52</sup> Juergensmeyer, 5.

<sup>53</sup> Johnson, 154.

one.<sup>54</sup> In this context, terrorism becomes a catalyst once the conditions for revolution already exist. The strategic objective of revolutionary terrorism is to provoke the government into an over reaction. This government overreaction may isolate moderates and thus tip a potentially revolutionary situation into a revolution. Additionally, political terrorism may also be used to elicit specific concessions from the establishment. Certain terrorist acts may appear to be tactical successes but revolutionary war theorists generally see it as a losing strategy over the long term. The physical damage done by terrorism is often negligible, but the real impact of terrorism is that it can undermine the legitimacy and capability of the government. The continued use of terrorism by a revolutionary movement may build a reliance on it but its continued use ultimately becomes counterproductive. The use of political terrorism in revolutions may be successful at undermining the government because it demonstrates the government's inability to regulate the previously discussed balance of forces of a social system. This disequilibrium could cause a population to question its government but is also the reason that its continued use will not be tolerated by the masses.

Early revolutionary warfare studies also used systems thinking to address the problem. An early RAND study by Lienes and Wolf is one of the first pieces to view insurgents as a system. Although rudimentary, this was an important step forward in our understanding of asymmetric warfare.<sup>55</sup>

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<sup>54</sup> Johnson, 156.

<sup>55</sup> Nathan Leites and Charles Wolf Jr., *Rebellion and Authority: An Analytic Essay on Insurgent Conflict* (Santa Monica: RAND, 1970).

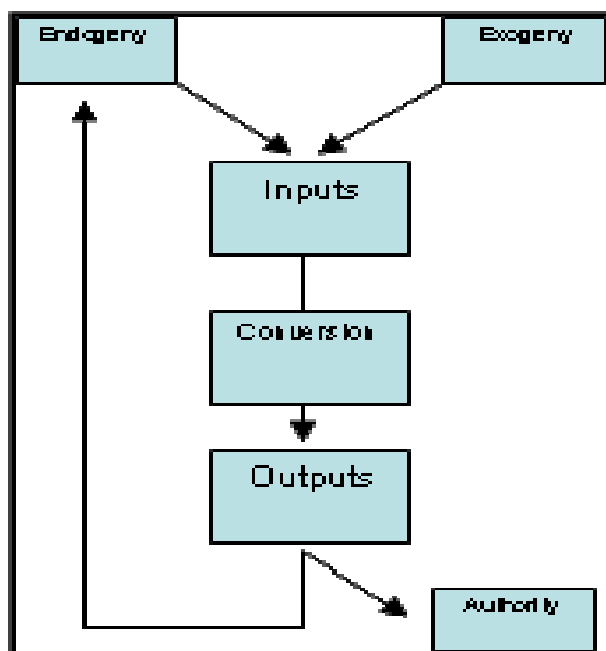


Figure 2. Leites and Wolf Insurgent System

Revolutionary war studies are useful for terrorism analysis. Not only do they almost always address terrorism but they are also focused on the violent process of social–political change. The use of systems thinking to study revolution has been carried over into the study of terrorism.

**i. Systems Theory and Terrorism.** Systems theory has been used to analyze terror groups as systems that output violence. Studies of terrorist groups as systems such as Thomas, Casebeer, and Kiser's *Warlords Rising* are valuable contributions to the field because they result in a deeper understanding of the group's dynamics and how these violent actors interrelate to the environment.<sup>56</sup> *Warlord's Rising* uses systems thinking, specifically an open systems framework to analyze Violent Non State Actors (VNSA). This systems approach examines the environment, organization,

<sup>56</sup> Troy Thomas, Stephen Kiser, and William Casebeer, *Warlords Rising: Confronting Violent Non-State Actors* (Lanham: Lexington Books, 2005). Troy Thomas and William Casebeer, "Deterring Violent Non-State Actors in the New Millennium," *Strategic Insights* 1, no. 5 (2002), <http://www.ccc.nps.navy.mil/si/2004/mar/casebeerMar04.asp>. (accessed 1 December 2007)

and internal dynamics of “malignant armed groups.”<sup>57</sup> This ambitious work focuses on VNSA as systems and how the environment impacts those systems. Likewise, how counterterrorism policies can disrupt the VNSA either directly or by influencing its environment. Using a similar methodology, this paper strives to explain how the environment, specifically the social system is impacted by terrorism in an attempt to better understand how terrorism works. Additional conflict systems theorists such as Anderson, Coyle, Davis, Jenkins, Enders, Walter, and Sanders have analyzed violent groups and various conflicts as systems.<sup>58</sup> This approach is an excellent tool to analyze conflict and can improve specific counterterrorism policies. These studies examined specific conflicts and groups as systems who output violence.

This thesis will build upon the idea that terrorism is an output but more specifically address what happens when that output becomes an input to the social system. We have established that both Al Qaeda and our society are systems. Various post 9/11 analysis of Al Qaeda has led to a deeper understanding of its components, its inner workings, and how we can target it. This is an important process but what happens when Al Qaeda’s output becomes a social system input? This thesis is focused on that system’s reaction and how we can leverage that knowledge in the future.

## **G. THEORETICAL SYNTHESIS**

This chapter explained the methodology and reviewed the existing literature used in this thesis. The methodology was to describe the problem, describe the systems at work, identify major elements of the system, postulate the system’s structure and dynamics, develop a theory/model, evaluate the model, and finally communicate results

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<sup>57</sup> Troy Thomas, Stephen Kiser, and William Casebeer, *Warlords Rising: Confronting Violent Non-State Actors* (Lanham: Lexington Books, 2005), 2.

<sup>58</sup> Ed Anderson, “A Preliminary System Dynamics Model of Insurgency Management: The Anglo-Irish War of 1916-21 as a Case Study,” Working Paper (2006). R. G Coyle, “A System Description of Counter Insurgency Warfare,” *Policy Sciences* 18 (1985): 55. Paul Davis and Brian Jenkins, *Deterrence and Influence in Counterterrorism: A Component in the War on al Qaeda* (Santa Monica: RAND, 2002). Walter Enders and Todd Sandler, “Transnational Terrorism in the Post-Cold War Era,” *International Studies Quarterly* 43, no. 1 (1999): 145-167. Walter Enders and Todd Sandler, “Is Transnational Terrorism Becoming more Threatening? A Time-Series Investigation,” *The Journal Of Conflict Resolution* 44 (2000): 307-332. Walter Enders and Todd Sandler, “Transnational Terrorism 1968-2000: Thresholds, Persistence, and Forecasts,” *Southern Economic Journal* 71, no. 3 (2005): 467-482.



and conclusions. The literature review in this chapter highlights existing work in various fields needed to support the propositions and ultimately the conclusions of this thesis. Major literature and ideas from systems theory, social change theory, and terrorism were discussed. Systems theory can be used effectively to analyze specific terrorist groups and social systems. Both are living, open, complex systems that share certain characteristic with all open living systems. These systems tend to achieve a balance of forces or dynamic equilibrium. This equilibrium is required for a system to operate normally. Using these tools we can analyze what negentropic inputs allow systems like terrorist group to function and thus how we can end or stunt their life cycle. Violence is one output of violent terrorist systems. Systems theory will be used throughout this paper to analyze how terrorism impacts social change.

This literature review could not hope to capture all of the work in any one of these prolific subjects but introduced key themes and ideas relevant to understanding how terrorism works. At this point, the reader should understand the methodological process, some basic systems concepts, some notions of how social systems change, and sufficient terrorism theory needed to move forward. The following chapter will expand on the notion of equilibrium in social systems. As will be shown in the next section, the characteristic of dynamic equilibrium in social systems is the key to understanding terrorism's impact on society.

### III. THEORIES OF SOCIAL CHANGE AND EQUILIBRIUM THEORY IN SOCIAL SYSTEMS

#### A. THEORIES OF SOCIAL CHANGE

This short chapter will review the three predominant theories of social change but focus on equilibrium theory. How and why a social system changes is critical to understanding terrorism's impact. Richard Appelbaum's *Theories of Social Change* provides an excellent overview of the three major theories of social change.<sup>59</sup>

**1. Evolution.** Most readers are familiar with the general theory of evolution, most notably Darwin's *The Origin Of Species*.<sup>60</sup> The evolutionary or neoevolutionary theories of social change follow Darwin's evolutionary logic to explain how societies evolve over time.<sup>61</sup> Based on this theory, modernization is a product of evolution. These theories are much more complex and nuanced than is presented here (dealing with specialization, industrialization), but these nuances are not relevant for our purposes. For our purposes, this theory posits that change occurs as a natural process of social evolution. At the system level of analysis, the society may have no or limited consciousness of this process.

Much like an organism undergoing a slow process of change, it does not have an awareness that its various components and sub systems are changing. The organism may be unaware but the change is still occurring. This is also true with social systems. Changes occur within their system but the society has no specific awareness of this change. We will return to the idea of social evolution later.

**2. Conflict Theory.** Another major approach to social change is conflict theory. Conflict theorists believe that the social system is inherently unstable and

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<sup>59</sup> Appelbaum, 65-79.

<sup>60</sup> Charles Darwin, "On the Origin of Species by Means of Natural Selection, or the Preservation of Favored Races in the Struggle for Life," Darwin Online (originally published 1859), <http://darwin-online.org.uk/content/frameset?itemID=F373&viewtype=text&pageseq=1>. (accessed 29 November 2007).

<sup>61</sup> Appelbaum, 15-43, 81-97.

changes in society are due to internal conflict. Conflict occurs because society consists of interdependent systems that are not well integrated or balanced. This Hobbes-ian perspective sees society in a constant state of conflict for power and influence. This struggle is not always violent if non violent means to achieve power and influence exist. A central government is important to impose order on our otherwise primal struggle against one another. Social change thus occurs as a result of this perpetual struggle for power and the emergence of central control mechanisms. The classic Marxist class struggle is the most common example. Conflict theorists believe that internal conflict for power and resources is causal to social change.

**3. Equilibrium Theory.** The third major theory of social change is the equilibrium theory of change. As discussed in Chapter II, forces exist in a balance or equilibrium. Social change occurs when exogenous or endogenous inputs are made to the system. These inputs can move the system out of equilibrium. As a reaction, the system enacts change in an effort to restore equilibrium. This is a system process of self maintenance that regulates the components and dynamics of the system. When the system fails to maintain equilibrium, disequilibrium can occur. Disequilibrium will result in system dysfunction. Each system is unique and thus each systems response to disequilibrium will vary. However, in general, disequilibrium would disrupt the normal steady state that societies need to function normally. Radical social changes such as revolution or civil war may be a symptom of disequilibrium.

Finite points of these three theories conflict but the general notion that all three cause social change is plausible. They can all be equally correct in a broad sense. As a species, we evolve physically and mentally. Our societies evolve to meet our modern, more complex needs. As our societies progress, change is inherent. This change can be in response to external inputs such as terrorism or internal system conflict among the population. In order to operate effectively, the system is continuously driven to self reify, seeking a natural point of dynamic equilibrium. This homeostatic process may be a living system response to inherent and continuous conflict resulting in a need to restore system stability. Because the system inherently seeks balance to limit conflict, changes in one part of the system must be countered by other changes to restore or maintain

balance. As change occurs, additional change is required which repeats itself in a constant process of change and balance. This characteristic of system equilibrium acts as a social survival mechanism to limit conflict and restore some normal level of social equilibrium. It is homeostatic self regulation and causal to change.

## **B. EQUILIBRIUM THEORY IN SOCIAL SYSTEMS**

**1. Social Equilibrium.** The concept of equilibrium has been used by past theorists in multiple disciplines to explain actions within social systems and is critical to our understanding of how terrorism works.<sup>62</sup> We must understand how societies change in order to understand how terrorism inflicts or hopes to inflict change. This section will explore the equilibrium theory of social change in greater detail to eventually explain how social systems operate and thus how they are impacted by terrorism. This is fundamental to understanding terrorism at a system level.

As discussed in the literature review, Talcott Parsons is the most noted sociologist to advance the concept of social equilibrium as part of his structural-functionalism perspective.<sup>63</sup> Structural-functionalists see society as a system of interrelated components and can be considered the systems thinkers of sociology. Just as a terrorist group's structure and function are critical to our understanding of how they operate, so to is an in depth understanding of the structure and function of the society in which the terrorism occurs. Our society is an array of components and sub systems that interrelate to form a large, complex, interdependent, and dynamic system. As a living system, each component of a society contributes to its operation. Parsons explains that permanent social systems have a tendency to self-maintain order, expressed by him as the concept of equilibrium.<sup>64</sup> In line with both Bertalanffy and Miller's notion of steady state, this

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<sup>62</sup> Parsons and Shils, 107.

<sup>63</sup> Talcott Parsons, *Action Theory and Human Condition* (New York: Free Press, 1978). Robert G. Perrin, "The Functionalist Theory of Change Revisited," *The Pacific Sociological Review* 16, no. 1 (1973): 47-60.

<sup>64</sup> Talcott and Shils, 107.

equilibrium is not static but is instead an “ordered process of change.”<sup>65</sup> Parsons theorized that the interrelation of a system’s parts was critical to orderly system change as it limited randomness and thus increased stability. The characteristic of equilibrium is important to keep society functioning through a healthy, balancing process of change.

**2. Homeostasis versus Equilibrium.** A note is required here concerning the term “equilibrium.” Past sociologists, namely Parsons, suggested that self-maintenance of equilibrium is a fundamental characteristic of social systems. However, what he describes is not by definition true equilibrium. Instead, the term equilibrium was used by him and others to describe the maintenance of some social balance between multiple social forces.

True equilibrium (in its purest theoretical sense) is not achievable for a social system, but a moving or dynamic equilibrium between two or more variables is. Further, the process by which biological systems maintain dynamic equilibrium or a balance of various forces is called homeostasis. Some authors would prefer the use of the term homeostasis in place of the term equilibrium to describe this organic ability of a system to rebalance various internal forces. Homeostasis is simply an organism’s ability to self-regulate by adjusting physiological processes.<sup>66</sup>

There are important implications of this homeostatic concept for both social systems and terrorist groups. Viewing terrorism as a living system, an example of homeostasis could be group leadership. Like most organized groups, they require a certain level of leadership to function. Leadership can take many different forms such as hierarchal, decentralized, networks and so forth but a certain level is required. We should not mistake the decentralized, cell like structure of terrorist networks to mean a lack of leadership; it is simply a more effective structure for their particular system. Leaders are important to set priorities, manage resources, and operations. Too many or too few leaders may lead to dysfunction. Having too many leaders may deplete the number of

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<sup>65</sup> Parsons’ earlier work is criticized for not addressing this dynamic property of equilibrium. His later works are considered more flexible and recognized the idea of a moving equilibrium.

<sup>66</sup> American Heritage Dictionary, “homeostasis,” Dictionary Online, <http://dictionary.reference.com/browse/homeostasis> (accessed 29 November 2007).

people available for operations or other necessary functions while creating internal power struggles. Too few leaders could lead to disorganization, uncoordinated operations, lack of resources and generally poor performance. For these reasons, there is an optimum level of leadership based on a group's organization, size, or objectives. In other words, given the structure and function of this particular system, there is a balance of leadership that results in effective performance. The range of effective performance is the group leadership equilibrium. It may never reach an optimum point but if maintained within some certain leadership range, can be effective. The further outside this range it is (too many or too few leaders), the less effective the leadership will be. This is of course a simplification of the real leadership challenges.

In reality, all leaders are not equal, technology may allow for fewer leaders, and certain group dynamics may impact the leadership situation. The leadership equilibrium in this example is not just about numbers, but concerned with some combination of leadership variables. Leadership at the individual and group level of analysis is more complex but is offered here as a social system level example of dynamic equilibrium. Leadership equilibrium naturally exists as a characteristic of the terror group system, when it fails this balance may fall into relative disequilibrium and negatively impact operations. Homeostasis is the ability of the group to naturally adjust its level of leadership to fall with a range of equilibrium. Change is normal in this process. If too many leaders exist, conflict may arise and result in several being demoted or killed off. If too few are in place, leaders will rise from lower ranks to fill the void. This is a natural process to attain a balanced level of leadership. This process may seem chaotic or dysfunctional at the individual or group level but it is actually an orderly system process of homeostatic equalization. By definition, this is not true equilibrium because of the constant fluctuation but is a balance moving towards equilibrium. This process will be referred to as dynamic equilibrium for the remainder of this thesis.

**3. Arguments against Equilibrium.** The sociology debate over the existence, utility, and degree of usefulness over the equilibrium hypothesis is ongoing. Two of the major concerns are discussed here.

The theory of equilibrium has been accused of being too preoccupied with stability. Parsons himself was accused of being too occupied with the study of social structure and function to adequately address change.<sup>67</sup> It has been argued that social equilibrium emphasizes “self-maintenance and a return to a particular state if disturbed, implies an emphasis on the maintenance of the status quo.”<sup>68</sup> This argument would have merit if the pure scientific definition of equilibrium were used. Instead, as discussed above, Parsons’ idea of equilibrium is really a dynamic – changing drive to equilibrium and the process of homeostasis. Self-maintenance and a return to relative equilibrium does not equate to “status quo” in a society. It is a process of balance, not a process to achieve any particular constant variable. If you add weight to one arm of a scale until it equals the other, you have created a balance of opposing forces but did not return to the same weight you began with. The same is true in society, the process of balancing forces or dynamic equilibrium is real and continuous but it always leaves the social system different.

Another valid concern is the parameter of equilibrium. Past social scientists have questioned whether Parsons’ original notions of equilibrium were too strict and believed it did not allow for structural changes when a system was determined to be outside of equilibrium.<sup>69</sup> What are the bounds that define equilibrium versus disequilibrium? What happens when a system is in disequilibrium? These are important concerns for the analysis of a specific system but impossible to answer definitively across all systems. Each system is unique and therefore has a unique tolerance for equilibrium and disequilibrium. The parameters of dynamic equilibrium and a system’s reaction to various degrees of disequilibrium are unique to each system. In general, it is sufficient at this point to state that a social system does not function normally when in disequilibrium. Additionally, each system’s parameters for equilibrium are not static and may change as

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<sup>67</sup> Appelbaum, 69.

<sup>68</sup> Kenneth Bailey, “Beyond Functionalism: Towards a Non equilibrium Analysis of Complex Social Systems,” *The British Journal of Sociology* 35, no. 1 (1984): 1-18.

<sup>69</sup> Niklas Luhman, “The Paradox of System Differentiation and the Evolution of Society,” in *Differentiation Theory and Social Change: Comparative and Historical Perspectives*, ed. Jeffrey C. Alexander and Paul Colomy (New York: Columbia University Press, 1990).

the system changes. As inputs are made to the system and homeostatic changes occur, they may fundamentally change the system's structure and organization which results in new parameters for equilibrium. Change disrupts equilibrium but is also a normal function of it.<sup>70</sup> Each system's tolerance for disequilibrium changes as the system goes through the continuous process of social change. As these changes occur, dynamic equilibrium is maintained (or restored) and a "qualitatively different equilibrium" is maintained.<sup>71</sup> It is most useful at this point to consider dynamic equilibrium a continuum and not a fixed data point. Each analysis of a specific system must determine and specify the parameters of disequilibrium based on their assessment of normal system operations. The process of dynamic equilibrium maintains overall system balance through system change. Systems, through the interaction of its parts, must stay within the boundaries of dynamic equilibrium to operate in normally.<sup>72</sup>

The debate (like most social science theories) will continue but Parsons' work is an insightful starting point to understand how social systems change.

**4. Dynamic Equilibrium.** For purposes of this paper I consider social system dynamic equilibrium: *an organic characteristic of all social systems to move towards balance between two or more social forces that results in social changes. It is a homeostatic balancing of forces, not a return to a status quo. Perfect equilibrium may never be achieved but the drive to achieve it results in social changes.* Social system homeostasis is the process by which society self-regulates or tries to achieve a dynamic equilibrium. Dynamic equilibrium is inherently homeostatic and will not be re specified as such throughout the remainder of the thesis. True social equilibrium (parity of opposing forces) is improbable but the process by which society balances multiple forces is that of dynamic equilibrium. When a social system strays outside its particular parameters of dynamic equilibrium it will enter disequilibrium.

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<sup>70</sup> Talcott Parsons, "A Paradigm for Analysis of Social Systems and Change," in *System Change and Conflict*, ed. Demerath and Peterson (New York: The Free Press, 1967), 191-2.

<sup>71</sup> Ian Robertson, *Sociology, 3<sup>rd</sup> Edition* (New York: Worth Publishers, 1987), 518.

<sup>72</sup> Robertson, 109.



### **C. EQUILIBRIUM AND TERRORISM**

Societies exist in various states of balance. Dynamic equilibrium is one way to understand social change and thus how terrorism works. Various components of the social system operate in a balance that can be disrupted. Inputs to the system can alter the balance of forces. The characteristic of dynamic equilibrium balances these changes and inputs which occur throughout the system as a self maintaining survival mechanism. Inputs to the system can come from inside or from outside the society.

American society is very open to routine internal and external inputs. Political activism is an example of internal inputs that can force peaceful change. Other examples of inputs to the system may be natural disasters, civil unrest, or violence. Any of these events has the ability to impact the system's dynamic equilibrium. If that balance is disrupted, the system forces other changes to restore a balance which results in a continuous and healthy process of change. Without this process, social forces would become increasingly imbalanced and thus increasingly dysfunctional.

Based on this process, external actors could make inputs to the system that are intended to imbalance dynamic equilibrium and change the system. This is how terrorism operates. A significant disruption of this balance can lead to system dysfunction, revolutionary changes, or even system collapse.

The characteristic of dynamic equilibrium is a balance of forces but the next logical question is which social forces? To answer this, we must first determine the components, organizations, and dynamics of the system to be examined. The following chapter will break down the social system and its components to better understand how terrorism leverages dynamic equilibrium. The following chapter will introduce the dynamic equilibrium theory of terrorism as a useful way to understand how terrorism works.

## **IV. DYNAMIC EQUILIBRIUM THEORY OF TERRORISM... HOW TERRORISM WORKS**

### **A. OVERVIEW**

This chapter will present the Dynamic Equilibrium Theory of Terrorism (DETT) as a context to understand terrorism. The previous chapters established a theoretical foundation for the ideas contained here. DETT is simply a new articulation of already established social, systems, and equilibrium theory. The first section of this chapter will first outline DETT and the remaining sections will support and expand these initial ideas. Since this theory is built upon system theory it is important to identify the structure, components, and dynamics of the system. These properties determine how the system will react to terrorism. This chapter will explain DETT as a useful framework to analyze complex social system problems such as terrorism.

### **B. DYNAMIC EQUILIBRIUM THEORY OF TERRORISM:**

Society is a complex system governed by the characteristic of openness and dynamic equilibrium. Terrorism is an input to this social system. The system principal of dynamic equilibrium, as outlined in chapter III, attempts to maintain a balance of various social forces so the system can function. When various social forces are out of balance, dynamic equilibrium is a catalyst that spurs change in an attempt to rectify the imbalance. Inputs such as terrorism can disrupt equilibrium and thus drive change in the system. Terrorism works by creating some level of social disequilibrium and thus social/political change. To understand the concept with more specificity, we need a better understanding of the components that are balanced by dynamic equilibrium and disrupted by inputs of terrorism.

This thesis adopts a simple but useful model of the social system composed of only two primary components; value and the environment. These two components, explained in greater detail below, exist in a balance. When these two components are in balance (or relative equilibrium) the system can be considered healthy and will function

normally. The farther out of equilibrium these two components are, the greater the property of dynamic equilibrium will act as an impetus for change. Therefore, inputs to one or both of the systems primary components that decrease equilibrium, can force change. Terrorism causes change in the system by creating an imbalance of social forces. Although all political violence is intended to force change, terrorism does so by being an input to a system's environment that is at immediate odds with its value component and thus increases relative disequilibrium between the two. This imbalance thus results in changes to restore value-environment balance.

The dynamic equilibrium theory of terrorism is: *Terrorism is a tactic that is chosen because it is perceived to work as a tool for social/political change. It is a violent input to the environment at immediate and recognizable odds with a system's values and as such decreases the equilibrium between the two. When some level of disequilibrium exists between the value and environment components, the homeostatic characteristic of dynamic equilibrium tends to drive changes within the system in an effort to restore value-environment equilibrium. Therefore, terrorism can induce political/social change by targeting social system equilibrium.*

This concept is represented graphically in Figure 3. Inputs to the system either improve or disrupt the value-environment balance. Due to the homeostatic characteristic of dynamic equilibrium, imbalances spur other changes within the system in an attempt to restore parity.

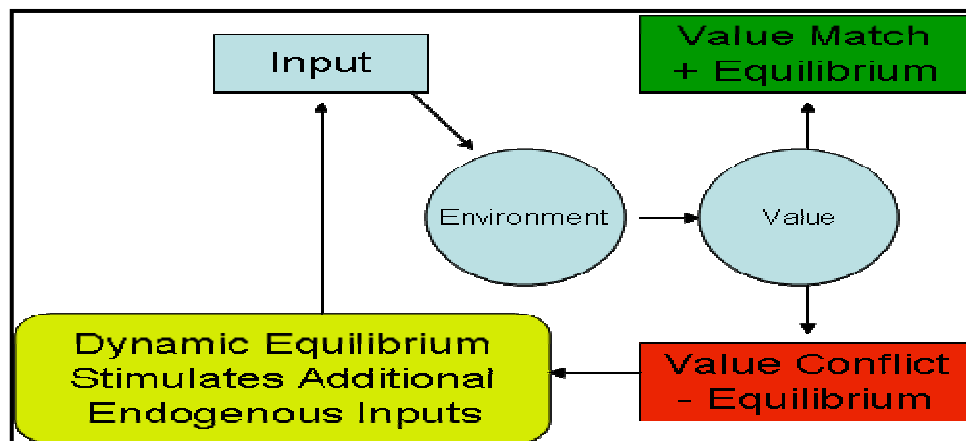


Figure 3. Process of Dynamic Equilibrium

Terrorism does work to spur changes in social systems but rarely achieves its intended objectives. The immediate impact of terrorism may lead its users to believe it is effective. Each society and government will be impacted by and respond to similar types of terrorism differently. Every system is unique and thus inputs of terror may force change easily in one system but not in another.

If this input of terrorism moves the system too far out of equilibrium, true disequilibrium may occur. A state of true disequilibrium exists when the system cannot function using its existing structure or organization. In this situation, the mechanisms that normally govern change are no longer adequate to equalize the system. Recovery from disequilibrium will result in structural or functional changes that may result in a fundamentally different system. Violence will most likely be associated with disequilibrium.

Each system is unique but with a clearer understanding of the system and the use of DETT, it may be possible to predict how certain terrorism inputs may impact the system and thus which counterterrorism policies will be most effective.

DETT offers an explanation concerning the interplay of terrorism and social systems. Properly conceptualized, DETT can be a useful tool in understanding relationships between social system change and terrorist activities. The remainder of this chapter will further explain these ideas and focus on the dynamics that occur within a social system when terrorism strikes. As suggested below, the building block of this theory is the value-environment construct as a social system structure.

### **C. SOCIAL SYSTEM STRUCTURE**

The predominant theoretical approach to analyze social systems is not the value-environment construct introduced above. Social science traditionally views society as a series of interacting human components such as individuals, groups, bureaucracies and institutions.<sup>73</sup> Talcott Parsons examined social systems as a “plurality of individual

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<sup>73</sup> Robertson, 90-94. This is perhaps the most common approach to social system analysis. Society and social systems are studied as purely human structures that focus on statuses, roles, groups, and human institutions.

actors interacting with each other.”<sup>74</sup> This approach aimed at assessing human societies as a separate system from (although impacted by) the surrounding environment. While a useful approach to examine components of a human system it is not the best approach when determining how terrorism impacts society as a whole.

Instead, the value-environment approach considers the social system as including the physical environment. Kenneth Boulding in *Ecodynamics* suggests that one cannot view the “human social constellation” separate from its environment. He states that “there is no sense at this stage of evolution on earth in talking about ‘the environment’ as if it were nature without the human race.”<sup>75</sup> Human society is part of the environment and the environment is an integrated variable which impacts how human systems operate. It is the position of this paper that examining society outside the context of the environment could lead to an incomplete analysis of terrorism’s impact on society and vice-versa.

In his book *Revolutionary Change*, Chalmers Johnson introduced the value-environment construct. He utilized it as a tool to understand when societies were ripe for revolution, but this thesis argues its relevance for the study of terrorism.<sup>76</sup> As illustrated in Figure 4, society is separated into two primary components; the environment and value. These two elements are the core components of the social system that represent the division of the physical and non physical components of our society. In the following section we will first examine each component separately and then discuss how the dynamic interaction of these two components is useful to understanding terrorism.

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<sup>74</sup> Talcott Parsons, *The Social System* (Glencoe: The Free Press, 1951), 5.

<sup>75</sup> Kenneth E. Boulding, *Ecodynamics; A New Theory of Societal Evolution* (Beverly Hill: Sage Publications, 1978), 31.

<sup>76</sup> Johnson, 41-60.

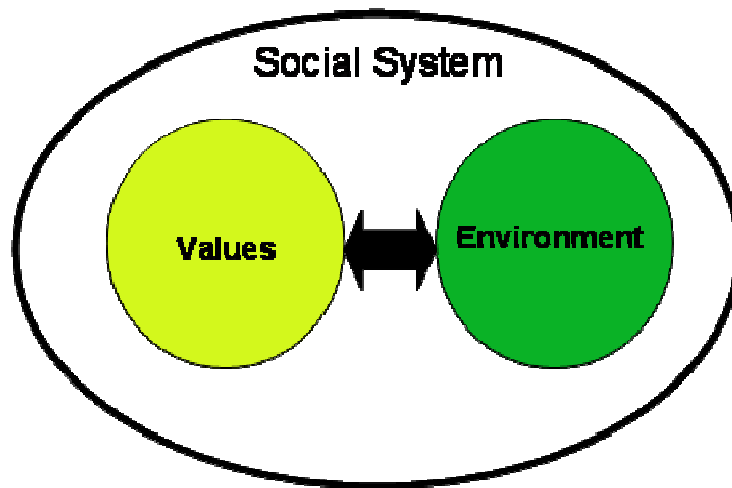


Figure 4. Social System Components<sup>77</sup>

#### D. SOCIAL SYSTEM COMPONENTS

**1. Environment.** The environment represents the physical world and includes the system's physical condition. The environment consists of natural terrain, man made terrain (buildings, infrastructure, etc), individuals, groups, and any physical actions. This includes all physical aspects of a population such as demographics, language, physical ethnic markers, education, finances, resources, etc.<sup>78</sup>

Environment variables can be subdivided into countless categories and subcomponents. Defining the environment is important but must be done for the specific system being examined. Each social system and its environmental components are unique and thus should be determined before an analysis begins. The level of social system analysis and boundaries of the system must be specified. Depending on the scope of the analysis, the environment could be detailed to the individual level or left broad such as only defining only a few general environmental sub components.

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<sup>77</sup> The author was initially exposed to these general concepts of value-environment and the illustration at Figure 4 during Naval Postgraduate School, Seminar in Guerilla Warfare, Spring 2007, taught by Professor Gordon McCormick. This value-environment construct was discussed to illustrate Chalmers Johnson's notion of social disequilibrium as a necessary condition for revolution.

<sup>78</sup> The World Trade Center Towers and the American Airlines 767 that hit it were components of the environment. When the later met the former at a high rate of speed the environment changed.

The sub components of environment used will remain broad but the task of categorizing all sub components of the American social system could be a mammoth analysis. Instead, Chapter V of this thesis will identify and examine only the major sub systems of the American social system environment useful to detect equilibrium changes post 9/11. Figure 5 illustrates some of these potential environment variables.

<b>Example Environmental Factors:</b>	<b>Example American Environmental Factors (2006 data):</b>
<p><b>Geography</b></p> <p><b>Government</b></p> <p>Type?</p> <p>Function?</p> <p>Effectiveness?</p> <p><b>Laws, Treaties</b></p> <p><b>Political Climate</b></p> <p>Stable?</p> <p>Civil Liberties?</p> <p><b>Structures/Infrastructure</b></p> <p>Buildings?</p> <p>Roads?</p> <p>Com munications?</p> <p><b>Population</b></p> <p>Ethnicity?</p> <p>Race?</p> <p>Religion?</p> <p>Language?</p> <p>Dem ographics/Density?</p> <p>Birth/Death Rates?</p> <p>Immigration?</p> <p>Labor Force?</p> <p><b>Economy</b></p> <p>Gross Domestic Product?</p> <p>GDP Per Capita?</p> <p>Inflation?</p> <p><b>Standard of Living</b></p> <p><b>Security Environment</b></p> <p>Crime Rates?</p> <p>State of Conflict (Peace?)</p> <p><b>Security Forces</b></p> <p>Police (Roles, Effect?)</p> <p>Military</p>	<p><b>Geography</b></p> <ul style="list-style-type: none"> <li>- 9,826,630 sq km</li> </ul> <p><b>Government</b></p> <ul style="list-style-type: none"> <li>- Divided into 50 States</li> <li>- Federal Government</li> <li>- Three Branches</li> <li>- Democracy</li> <li>- Collects Taxes</li> <li>- Provides Services</li> <li>- Passes/Enforces Laws</li> <li>- Controls Legal Use of Force</li> <li>- Free of Major Political Violence</li> <li>- Political Activism is Encouraged</li> </ul> <p><b>Population:</b></p> <ul style="list-style-type: none"> <li>- 299,398,484</li> <li>- Median Age: 36.6 years</li> <li>- Death Rate 8.26/1,000</li> <li>- Life Expectancy 78 years</li> <li>- White 81.7%, black 12.9%</li> <li>- Asian 4.2%</li> <li>- Protestant 52%, Catholic 24%</li> <li>- Mormon 2%, Jewish 1%</li> <li>- Muslim 1%</li> </ul> <p><b>Economy:</b></p> <ul style="list-style-type: none"> <li>- GDP \$13.06 trillion</li> <li>- Unemployment 4.8%</li> <li>- Poverty 12%</li> <li>- Inflation Rate 2.5%</li> <li>- Budget \$2.66 trillion</li> </ul> <p><b>Standard of Living</b></p> <ul style="list-style-type: none"> <li>- Per Capita GDP of \$43,500</li> </ul> <p><b>Security Environment</b></p> <ul style="list-style-type: none"> <li>- 17,034 Murders</li> <li>- 2,183,746 Burglaries</li> <li>- 14,380,370 People Arrested</li> </ul>

Figure 5. Environment Examples

A major hypothesis of this thesis is that terrorism, as a physical act, alters the environment. It kills people, destroys buildings, and alters terrain. It can potentially impact military capabilities, economies, decrease standards of living, and makes other

changes to the environment. As an observable act, we are familiar with the environmental impacts of terrorism but far less familiar with its impact on values.

**2. Values.** The values of a social system represent the mental and emotional components of the system. Hence, values are essential to how a social system thinks and believes. Values are “socially shared ideas about what is good, right or desirable.”<sup>79</sup> It is the way a society believes the world should.

Parsons described values as “the commitment of individual persons to pursue and support certain directions or types of action for the collectivity as a system and hence derivatively for their own roles in collectivity.” Values, in other words, are an explanation of a social system’s standards of appropriate action, designed to produce some desired outcome.<sup>80</sup> Doctrines, ideology, morals, political persuasions, or religious beliefs can all be part of society’s values.

**a. Value Sub-Components.** Societies have collective values. The sub-components of value are frequently studied sociological topics and difficult to measure. We can determine these collective values through observation, surveys, polls, and a societies own words. Norms are one subset of values as they set social standards. They are “shared rules or guidelines that prescribe the behavior appropriate in a given situation.”<sup>81</sup>

Roles are also an important aspect of this variable. The physical role of an individual or group is part of the environment but the role which they believe they should play is an important part of the value component. Our values also define the roles and status of government. Collective values are a source of government power. They grant legitimacy to a legitimate authority.<sup>82</sup>

Culture can be seen as a physical manifestation of these values. It is the social system’s identity or personality derived from its shared values. We cannot see the

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<sup>79</sup> Robertson, 64.

<sup>80</sup> Johnson, 22.

<sup>81</sup> Robertson, 62.

<sup>82</sup> Johnson, 31.



cognitive and emotional elements of culture but understand it from its physical manifestations such as food, art, literature, language, and family or community interaction.

**b. Values are heterogeneous.** Each system is unique but in most social systems, individuals and groups have different beliefs of what the world should be or how we should act. Therefore the social system value components are not homogenous, but instead a consensus of what is perceived as acceptable behavior.

Values are a mix of different beliefs but a collective value does emerge. This results in one value component composed of many different sub beliefs. If there is strong social consensus on the issue it becomes a nearly homogenous data point of our collective values. However, more often and more difficult for society are issues where no clear consensus emerges. Challenges for societies and governments can arise from a fragmented value component. Often political activists may and do try to take advantage of these fissures between value sets.

Conflict theory could be viewed, using this model, as a conflict of the system's value component. Traditional conflict theory views some type of political or social conflict as causal to violence. Conflict theorists would argue that the competition for resources, status, or power is our natural state. They contend that social change occurs as a result of these conflicts.

If the value-environment construct is used to examine this notion, it becomes wholly complimentary to equilibrium and evolutionary theory rather than exclusive of them. Conflict among world-views is inevitable. The value component of society is inherently diverse and grows more so as societies receive input and evolve. Conflict within this value component can, but not always, cause conflict in the environment. Certain systems have mechanisms to allow for greater diversity within a value component while others may not. Conflict theory as discussed in Chapter III could be viewed as a system's fragmented value component. Disagreement or fragmentation among this a social system's value component is inevitable but when it is acted upon physical conflict may occur. Different individuals or groups within the same system view the environment

differently and take steps to modify the environment so that it better matches their values. Thus, a conflict in values manifests itself in the environment which may lead to physical conflict. Conflict theory could be seen as a physical manifestation of value fragmentation.

American societal values are very diverse but do not routinely lead to political violence. Take, for example, the relationship of increased domestic security to civil liberties. This is currently one of the most pressing domestic counterterrorism challenges. Many counterterrorism measures are perceived as oppressive and restrictive. There is a common perception that increased security equals decreased civil liberties.

The fragmentation of this value sub component is evident in a recent Pew Research Center poll, listed at Figure 6. The question “What concerns you more about the government’s anti-terrorism policies?” shows that 50% of Americans believe that the government has not gone far enough to provide security. However, one third of the population believes civil liberties have been eroded too far. This is a significant split of the population on a core American belief. The polarization on this issue is evident from today’s political and media coverage of contentious issues such as national identification cards, the Patriot Act, and recent “domestic spying” initiatives. The balance between civil liberties and our public tolerance for additional security should be tantamount to our counterterrorism planning. Based on this current pew data, the public value is fragmented on this issue but there is still half the population that believes security has not gone far enough.

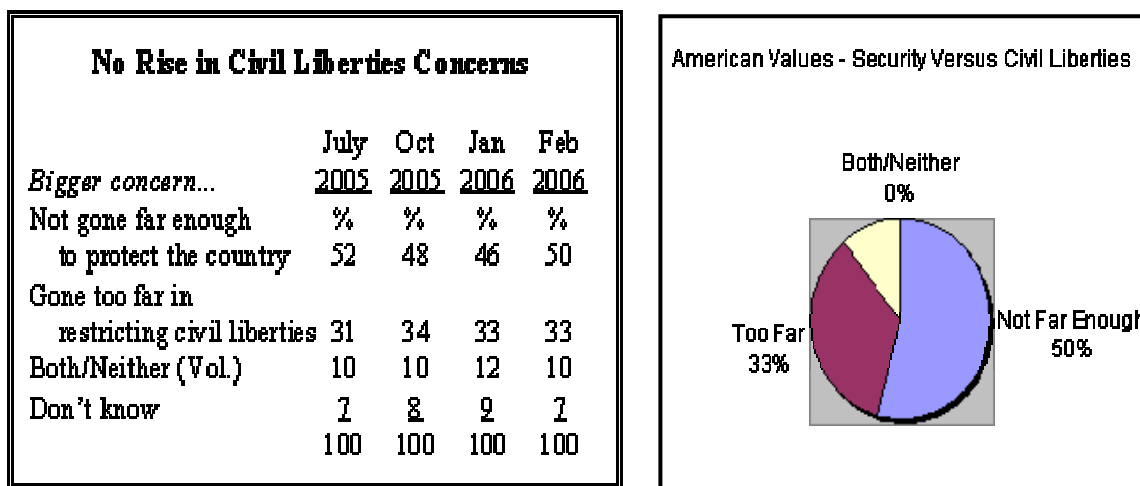


Figure 6. American Values - “Civil Liberty Concerns”<sup>83</sup>

c. **Values Change.** Societies form collective beliefs but they are not necessarily fixed. Certain beliefs such as civil liberties may be fundamental to a certain society but are still malleable. Values change slowly so may appear fixed but do change over time.

Additionally, open social systems may change more rapidly than a closed society.<sup>84</sup> A good example of changing values is the global decline in the acceptance of suicide terrorism. Based on world events and media coverage, the public perception may be that suicide terrorism is increasingly being accepted by Muslims. This is not correct. In July 2007, the Pew Research Center published a surprising global attitudes survey. The report is surprising because it finds that the world is generally a happier place today than it was in 2002 and that suicide terrorism is decreasingly being accepted by some Muslims.<sup>85</sup> Specifically, the data shown in Figure 7 reflects a “sharp” decline in support for suicide bombings against civilians in the defense of Islam in most Muslim countries surveyed.

<sup>83</sup> PEW Research Center, *Iran a Growing Danger, Bush Gaining on Spy Issue* (2007), <http://people-press.org/reports/display.php3?ReportID=269> (accessed 9 October 2007).

<sup>84</sup> The relative openness of societies will be discussed later in this chapter.

<sup>85</sup> PEW Research Center, *A Rising Tide Lifts Mood in the Developing World; Sharp Decline in Support for Suicide Bombing in Muslim Countries*, (2007), <http://pewglobal.org/reports/display.php?ReportID=257> (accessed 9 October 2007).

Fewer Muslims View Suicide Bombing as Justified			
<b>Often/ sometimes justified:</b>	<b>2002</b>	<b>2007</b>	<b>02-07 change</b>
	%	%	
Lebanon	74	34	-40
Bangladesh	44	20	-24
Pakistan	33	9	-24
Jordan	43	23	-20
Indonesia	26	10	-16
Tanzania	18	11	-7
Nigeria	47	42	-5
Turkey	13	16	+3
Palestinian ter.	--	70	--
Mali	--	39	--
Malaysia	--	26	--
Kuwait	--	21	--
Ethiopia	--	18	--
Senegal	--	18	--
Morocco	--	11	--
Egypt	--	8	--
Based on Muslim respondents.			

Figure 7. Pew, Changes in Global Values

Declining Muslim Confidence In Osama Bin Laden			
A lot/some confidence:			
<b>Muslims in:</b>	<b>2003</b>	<b>2007</b>	<b>Change</b>
	%	%	%
Jordan	56	20	-36
Lebanon	20	1	-19
Indonesia	59	41	-18
Palestinian ter.	72	57	-15
Turkey	15	5	-10
Pakistan	46	38	-8
Kuwait	20	13	-7

Figure 8. Declining Muslim Confidence in Bin Laden

Data is not available for all countries but these trends are surprising and encouraging. This demonstrates that system values can be changed and a downward trend in public support for suicide terrorism is a positive, although rarely heard development.

Another interesting value change listed in Figure 8 has been the declining Muslim confidence in Osama Bin Laden. In the surveyed countries, there was a significant decline opinions concerning Bin Laden's ability as a leader. Even in the Palestinian territories where little political or social progress has occurred, there was still a 15% decline in confidence for Bin Laden.

Although the downward trend is positive, the number of respondents that considered Bin Laden "somewhat confident" to perform as a world leader is still troubling high. Based on the declining operational capability of Al Qaeda in Iraq, it is fair to say that confidence for Bin Laden in Iraq is also following these trends. The decrease in support for both suicide terrorism and Bin Laden could suggest an interesting value shift in the Muslim world away from terrorism as a legitimate means to pursue social-religious change.

**d. Use of Force.** When examining terrorism, an important part of the value component is the legitimate versus illegitimate use of force. Our values (as defined by the government) define what, when, and how force should be used legitimately. Some argue that this is the most important function of values in a society.<sup>86</sup> Collectively, as a free democratic society we determine when individuals and the government can use force. In many cases, laws are used to codify these social limits on the use of force.<sup>87</sup> However, on occasion, legal violence may be viewed as illegitimate while illegal violence may be considered legitimate. Our laws do not always support the current collective value. In America, we accept that police and military forces must exert force to protect our neighborhoods and country but we impose limits. We even accept use of

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<sup>86</sup> Johnson, 27.

<sup>87</sup> Laws could also be used to change values or as a repressive measure that controls individual action when there is value – environment relative disequilibrium. Although cynics would disagree, in a democratic society, laws generally reflect our collective values.

force by civilians under certain conditions. When force exceeds the standards of our collective values, Americans are quick to protest even if those acts are technically legal. Police brutality, the Abu Ghraib prison scandal, and most recently the Blackwater private security company's shooting of at least two Iraqi civilians are examples of public discontent with our government uses of force. Our values may not keep these incidents from happening but do *set an important social limit on the accepted use of force*. The more control a population has over its own government of course determines how much they can regulate government behavior. Democratic governments are responsive to the collective values of its public. We will further examine the roles of governments below.

In addition to setting limits on the use of force, collective values can also sanction violence. In some cases, it can sanction political violence against our own government. In America, political activism is encouraged but sometimes crosses the line and civilian violence is exerted. Although illegal, sometimes this civil violence may actually fall within an accepted value parameter. The 1999 World Trade Organization protests in Seattle are a possible example. Some of these protests were illegal, violent, and costly but some Americans believed these acts were a valid form of social protest against globalization and economic hegemony. This example demonstrates that certain values can sanction or condemn political violence.

So far we have examined society as a complex system that can be analyzed many different ways. This section introduced a simple yet useful model to view the social system as an interaction between two primary system components; values and environment. In this model, value is the mental and emotional component of the system while the environment represents the physical dimension. As an open system, our society is subject to internal and external inputs. These inputs can change both the value and environment components which may disrupt the dynamic equilibrium between the two. The natures of these inputs are important to how the system reacts.

## **E. SYSTEM INPUTS**

**1. Inputs.** Once the system has been defined we can examine how inputs impact the system. These inputs can be made to both the value and the environment components. Examples of terrorist inputs to the environment are observable and fairly obvious. This input generally causes destruction and casualties. However, terrorist inputs to the targets system's values are more subtle, not necessary illegal, but equally important. An example may be when Islamists convince a local population that suicide bombing is a moral and honorable act. Through a series of non violent inputs, they can change the subject's beliefs.

Al Qaeda has also implemented an offensive against our values. We see and understand the environmental inputs of the Islamist attack but Al Qaeda has also attacked our values on numerous occasions. In this effort, they have even been partially successful in convincing Americans that the 9/11 attacks were justified by United States policies in the Middle East. They use the internet, satellite television, taped broadcasts and spokesmen to impact our values.

Bin Laden uses two different narrative strategies depending on his audience, one designed for western audiences and another to his perceived Muslim constituency. To Americans he is careful to frame his actions as a localized defensive fight in response to oppressive foreign policies. He attempts to have his message resonate with American values. Within the Muslim world he is more honest about his global ambitions and religious motivations.

As suggested implicitly above, inputs can be made to both the value and environmental components of a system. Al Qaeda is pursuing a two front offensive, one against our environment and the other against America's value component. Their attacks are an example of inputs that come from outside of our system (exogenous) but inputs can also come from within (endogenous).

**2 Endogenous Inputs.** Endogenous inputs can come from a variety of internal sources. Inputs are considered endogenous if they come from within the system. The government, institutions, activist groups, and even individuals are capable of making

significant endogenous inputs to the social system. Most of the internal individual inputs are minor and induce only gradual or negligible system change. The vast majority of these routine endogenous inputs do not alter the value or environment components in such a way as to effect equilibrium in any meaningful way.

Collectively, however, those relatively minor and gradual inputs can result in change without major system shocks or disruption. This gradual change through routine inputs can be thought of as social evolution. The slow, balanced march forward of a society. Although most of the inputs are minor, together over time, they can have significant effects on the system. The notion of chaos theory, encapsulate this system dynamic. Countless inputs are made to the system that individually have a negligible effect, but combined together, cause a domino effect which over time leads to significant change. For example, our individual spending habits are relatively insignificant and would not normally be considered a counterterrorism issue. However, when combined with other people's spending habits, these choices drive the consumer market. This consumer economy in turn expands into new regions and develops new products based on our collective spending habits. Increased production requires more energy and specifically oil and ties us economically to the Middle East. Eventually, one's seemingly chaotic spending habits do have a systemic impact on national security and counterterrorism policy.

Although this paper is concerned with terrorism, the majority of these internal system inputs are non violent. Non violent social change occurs via this endogenous input process. Take for example the American electoral process. Candidates promise or represent a set of beliefs that translate to a certain future environment. Constituents, who share the candidate's values and desire the future environment being offered, cast votes (which are essentially inputs) for that individual. Elected leaders win because the majority of the system believes they will bring about a future environment that best meets our value component. The electoral process is a non violent system mechanism designed to govern political change. Whenever we make changes to our own system, our inputs tend to be measured and peaceful. We understand inherently that radical or sudden inputs can negatively impact our own system and thus ourselves. When endogenous



agents make disruptive endogenous inputs such as domestic terrorism, normally internal system mechanisms are usually in place to deal with the disruption and agent. For example, the domestic terrorists are dealt with through the criminal justice system. Exogenous agents do not share this concern about our system and the system may not have control over them.

**3. Exogenous Inputs.** Exogenous inputs come from outside the system. Al Qaeda is an exogenous agent who makes exogenous inputs to our system. Although they exist outside the system's boundaries, external agents have the ability to make inputs and thus influence our system. This exposure and often vulnerability to exogenous inputs is an inherent danger of open systems. The more open the system, the more exposed we are to exogenous inputs such as Al Qaeda. However, this increased exposure does not automatically equate to vulnerability. An open system has greater exposure but if it is also a flexible system, it will be less impacted by external inputs. America is a very open system but also very flexible. It receives many exogenous inputs but also processes them more effectively without disruption to the system.

Responding to exogenous vice endogenous actors is inherently more difficult for a system because it has little or no control over them. Within our own system, we can create mechanisms to deal with negative internal inputs such as crime. Our social system has developed an intricate system of law, enforcement, judiciary, and corrections to deal with this type of endogenous behavior. Hence, if Al Qaeda existed within our system, they could seemingly be dealt with by internal system mechanisms. These mechanisms may not exist or be effective against exogenous inputs. External or exogenous agents have the ability to impact us while our ability to retaliate is limited by the boundaries of our system. This gives exogenous agents a marked advantage to affect our system without suffering the consequences of the action.

The attacks of 9/11 were exogenous inputs. They altered the physical environment of the American system in the form of three thousand dead and \$95 billion in estimated damages. Environment inputs are obvious but Al Qaeda also took actions outside our system that impacted our values. Most Americans were outraged at the celebrations by some Muslim communities shown on television immediately after 9/11.

These celebrations may have been partially legitimate but were also encouraged by Islamists partially to provoke American hate and hopefully a reaction. Some Americans have fallen prey to subsequent Al Qaeda rhetoric that we “deserved it” or at least partially instigated it. These actions, outside our system had the effect of impacting our values. The brilliance of this attack was its multi pronged nature that changed our environment, attacked our values, and created a certain level of disequilibrium between the two that is resulting in social change.

*In sum, international terrorism directed at the United States is a violent exogenous input that targets the value-environment relationship.* By increasing some level of disequilibrium, terrorists attempt to create change in our system. The response or changes made may not be the changes they wanted but changes will occur.

As each system reacts differently, based on its unique structure and dynamics, it is now important to discuss social system dynamics. These dynamics will determine how inputs are received and processed by the system.

## **F. SOCIAL SYSTEM DYNAMICS**

The behavior of the social system is governed by certain characteristics, components, organization, and how all those components interact. These system dynamics govern how a system processes or reacts to inputs such as terrorism. Understanding the systems reaction to inputs may help us predict its behavior in certain circumstances. For this reason, understanding the dynamics of the American social system can help us understand and potentially predict how (and why) it reacts to terrorism in certain ways. This section will examine the idea of system openness/flexibility, review the characteristic of dynamic equilibrium, and the concept of disequilibrium. It will then explore how the system changes at certain levels of analysis, why the speed of system inputs matters, and finally the role of a government sub system.

**1. System Openness and Flexibility are Relative.** The openness of each system is relative. Not all open systems allow the same amount or types of inputs into the system. Likewise some systems are flexible and can deal with inputs that other more inflexible systems cannot. For these reasons, similar inputs of terrorism may impact

different social systems in drastically different ways which makes the application of general terrorism theory across different systems difficult. It may be beneficial to categorize different systems as open or closed (relatively) and flexible or inflexible. These differentiations have an impact on how a system receives and processes inputs.

A good comparison of relative system openness and flexibility is North Korea and the United States. The United States is a very open system. We are a society based on free speech and open communication. We encourage inputs. We may not like those inputs but we consider it a healthy part of the social system. As a result, the United States has evolved into an extremely flexible system which deals well with inputs. We are open-flexible.

On the opposite side of that spectrum is North Korea. The North Korean authoritarian government has created an environment that purposefully limits the amount of exogenous inputs. The system allows few inputs in and thus has less adjusting to do. As a result, they do not need to manage many system changes. The system is rigid and has not evolved to absorb many external changes. North Korea can be considered a closed-inflexible system.

If exogenous inputs enter an inflexible system, they may be more likely to generate a value-environment mismatch and force change than in an open-flexible system. Obviously something the North Korean government does not want. Since the divide of Korea in 1953, the North Korean government has been masterful at maintaining power in the face of dire social-economic conditions. They have done so by blaming others, fostering a rabid nationalism, and repression of all dissent. The population has been insulated from external inputs and their values are largely controlled by the government. However, say for example that we were able to make input to the North Korean value component. What would happen if the North Korean population began to believe that their social-economic hardships are caused by the North's failed government policies? If this value component was changed with no corresponding environment change, disequilibrium could be induced. Change would be needed to rebalance the system.

Since the government does not have the capability to improve welfare conditions, the North Korean regime's options are limited. As a closed-inflexible system, they control all of the system's mechanisms for change and can adjust values much more effectively than other societies. They can increase coercive policies against dissent, arrest instigators, and promise further punishment. This is an endogenous environmental input that further serves to increase a fear of dissent. A tight control of system inputs and ability to manipulate the value variable, North Korea is capable of maintaining system dynamic equilibrium within a parameter that allows the system to function and regime continued existence. Closed-inflexible systems have greater control but are more fragile if inputs do get into the system.

This is certainly not what most would view as a healthy system, but it is equalized. Balance is not a moral standard, just a system measurement. Equalized does not mean preferable to outsiders. The hypothetical in this example is not new, but using the value-environment construct to analyze these actions is informative. Viewing political control in this fashion could allow us to better predict system reaction to specific inputs. Even the North Korean system is subject to system characteristics and dynamics. The characteristic of dynamic equilibrium, discussed at length in Chapter III, mandates a value-environment balance. The following section will relate this characteristic directly to terrorism.

**2. Dynamic Equilibrium.** Society is an open, living, and complex system that has a primary characteristic to maintain a dynamic equilibrium. It self regulates in order to balance social forces, keeping the system within an acceptable range of dynamic equilibrium. The primary balance of forces for a social system is between the value and the environment components of a society.

The society as a system must adjust to the inputs made to it and as we have suggested these inputs can be endogenous or exogenous. The importance of this to counterterrorism is that terrorism can be analyzed as an input to the system. This input can have many varied effects. The uniqueness of terrorism, unlike other forms of

political violence, is that it is a violent alteration of the environment that conflicts with the value component and thus creates an instantaneous imbalance or some degree of disequilibrium.

Dynamic equilibrium is a normal system characteristic to counter this partial or relative disequilibrium. We are not suggesting that terrorist groups or leaders understand and purposefully leverage this knowledge in the context discussed here. Osama Bin Laden never sat in Kandahar and told Mohamed Atta to create an “environment-value mismatch.” Based on this property of dynamic equilibrium, DETT explains how terrorism works, why terrorism is unique, and why it is so hard to understand at non-systems levels of analysis.

Terrorism is perceived to be an effective tool by some because it almost always results in some observable change. Terrorism is a physical input to the system environment at immediate odds with collective values that plays upon the characteristic of dynamic equilibrium with the intent to force some level of social change. Dynamic equilibrium is critical to understanding how terrorism forces (or hopes to force) change because it is the system characteristic that manages change and can result in disequilibrium. A terrorist act or the repeated use of terrorism to imbalance the system can lead to system disequilibrium or a need for structural or functional changes in the system. The state of disequilibrium will be further explained in the next section. If the characteristic of equilibrium can be purposefully leveraged or disrupted, an exogenous actor has the ability to create significant perturbation and potentially even disequilibrium in the targeted system.

The often quoted Supreme Court commentary regarding pornography “I don’t know what it is, but I know it when I see it” is also applicable to terrorism. Terrorism is an act that creates a system imbalance and that imbalance has an almost instinctive feel. We see the environment and we feel collective value. An act in the environment is felt to be in accordance with or at odds with our values.

At the individual level of analysis, this leads to the subjective nature of terms like illegitimate violence and terrorism or “one man’s terrorist is another man’s freedom-

fighter.” At the individual level each person’s value-environment perception is different. However, at the social system level of analysis, there is a collective value that can be identified. If we can identify this collective value and define the environment of a particular system, we should be able to study the state of equilibrium. If we can measure equilibrium and understand the impact of terrorist inputs to that system, we should be capable of gauging the impact of terrorism on a society before, during, and after it occurs. A note on disequilibrium is required before we continue.

**3. Disequilibrium.** System changes occur when some degree of partial or relative disequilibrium occurs. Since total equilibrium is impossible in a social system, relative disequilibrium and thus change, are continuous and healthy. Most disparities in dynamic equilibrium are minor so normal system processes can manage the needed changes. When routine changes occur within the existing mechanisms of the system, no significant structural or organizational changes are required to restore balance.

The question then arises; at what point does this imbalance result in a level of disequilibrium when significant changes occur? Disequilibrium is a continuum not a certain breaking point. Say for example we where to measure dynamic equilibrium on a scale of 1 – 100. 100 is perfect equilibrium which is unrealistic to achieve for any amount of time and 1 is complete disequilibrium. All living systems function within this range. The characteristic of dynamic equilibrium as defined in this thesis drives the system to change and try to achieve a rating of 100. The lower it goes, the more system changes are needed to restore balance. A rating of 20 may indicate a serious state of relative disequilibrium but it has not reached true disequilibrium. The chart below illustrates this idea. As an example, this chart tracks the equilibrium of a social system over a three year period. For each year, five variables are charted. The environment, the value, overall equilibrium, disequilibrium, and pressure exerted on the system to change. As changes occur over the three years, equilibrium is calculated as the percentage of value agreement to environment.

Year	Environment (E)	Value (V)	Equilibrium (EQ)	Disequilibrium (DEQ)	Pressure to Change
	1-100	1-100	% Environment which equals Value (EQ=V/E)		
2005	75	55	.73	.27	Medium
2006	(+10) 85	(+2) 53	.62	.38	High
2007	(-15) 70	(+10) 63	.90	.10	Low

Figure 9. Sample Equilibrium Calculation

As equilibrium increases, disequilibrium decreases and thus lowers the pressure for change within the system. In this example, 38% disequilibrium existed in 2006 and a greater pressure for the system to change. Altering either (or both) the environment or the value variable can trigger an imbalance and increases the pressure to change. This same formula will be revisited in Chapter V.

Indicators of disequilibrium are major upheavals or dysfunction in the system that prevents or inhibits normal operations. Disequilibrium is recognized when the normal mechanisms for change no longer function as a homeostatic mechanism of restoration (driving the system back towards 100). Disequilibrium can lead to system death or major structural changes. Changes that occur at this level of dysfunction are revolutionary and not evolutionary. Violence is almost certain at this level of disequilibrium. This condition may materialize as a failed state, revolution, or even civil war.

This thesis is not attempting to explain the causes of terrorism, revolution, or state failure but simply identify a working understanding of the notion of social system disequilibrium. *Disequilibrium is defined as a state of extreme value-environment imbalance that can not be regulated by the existing mechanisms of a social system.*

A society may recover from disequilibrium but will be structurally and functionally a different system. To avoid this state, it may be possible to measure the

level of relative disequilibrium and manage it before it reaches total disequilibrium. Creating disequilibrium in an opponent's system could be an effective strategy to force change.

Up until this point, this thesis has addressed social change rather abstractly. The following section will talk more specifically to how a system changes or reacts to dynamic equilibrium.

**4. System Changes.** The process and types of changes that occur within a system vary based on different levels within the system. Analyzing the process of change within a system as complex as society without making a distinction between these levels could result in analytical confusion. For our purposes, the distinction between only two general levels for analysis is necessary. Each level has a different process for change. The *individual/group level* of society changes differently than at the *system level*.

**a. Individual and Group.** Individuals are the smallest human component of the system. They act as individual agents who are intricately connected to other components and sub systems of society. Individuals form groups or organizations. At the individual and group level, when our environment does not correspond to how we believe the environment should be (values) we have four options.

1. Change the environment and bring our physical condition as close to our values as possible.
2. Change our values. This may be an unconscious change, simply accepting that you cannot achieve the standards you have set.
3. A combination of both 1 and 2.
4. Do nothing.

The decision process to choose one these options and the means to achieve change are different for individuals and groups, but can still be categorized by these four choices. Behavioral psychology and the study of organizational behavior are fields that would deal more specifically with these individual choices and actions.

Individuals and groups make these decisions based on preferences or pressures at that level of analysis. Voting is an example of individual and group actions taken to change the environment. Sixty four percent of the voting-age public chose to vote in the



2004 presidential election.<sup>88</sup> That leaves a third of the population that chose not to make individual value inputs into the system. At the individual and group level, if a value-environment imbalance exists and nothing is done to correct equilibrium, dissatisfaction or frustration will build. Ted Robert Gurr's theory of relative deprivation, discussed in Chapter II best describes this process and its potential outcomes. The greater the value-environment mismatch, the greater the individual or group frustration and the corresponding potential for violence. There are many factors that would increase or decrease frustration but ultimately at this level of analysis, there is a conscious choice on what actions to take. This is not the case when analyzing how change occurs at the system level of analysis.

**b. System Level of Analysis.** The primary difference at the system level of analysis from the individual/group level of analysis is that of conscious choice. Individuals and groups are subcomponents of the system. The system is governed by structure, functional relationships, system properties, and the dynamics of its components. There is no system level conscious choice.

The social system has the same four responses as individuals when relative disequilibrium exists but the society (as a single entity) does not make these individual decisions consciously thinking about the overall health of the system. The reader should not infer that the system has some capability for rational choice independent of its components. The "choices" of a social system are the collective choices (inputs) of its components, governed by system properties and characteristics. At the system level, changes are not an automatic process, they are a series of system component choices (inputs) steered by system characteristics governed by system properties. Over time, as a social system evolves, societies develop mechanisms to deal with certain routine inputs and changes. These mechanisms can also become outdated. As the system continues to evolve, new mechanisms are needed and old ones lose their relevance. The American political process has evolved over time and has proven to be a resilient and effective mechanism to regulate peaceful political change.

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<sup>88</sup> U.S. Census Bureau, "Voting and Registration in the Election of November 2004," (2006), <http://www.census.gov/prod/2006pubs/p20-556.pdf> (accessed 12 October 2007).

If the system does not correct an imbalance, and the environment-value moves increasingly to disequilibrium, system level pressures or frustrations will build. This social friction impacts the systems ability to regulate normal operations as a society. This relative disequilibrium of forces may be characterized by a decrease in productivity, increased social unrest, increasingly divided communities, and a host of other symptoms. These symptoms are sometimes seen as causal to violence or terrorism when in fact they are more accurately signs of a relatively disequalized system. As a system slips into greater disequilibrium, the inputs needed to re equalize the system will be more radical and potentially violent. The type of change that occurs is dependent on the system and more specifically, the mechanisms for change that exist within the system. *When those mechanisms no longer function to manage homeostatic change... the system is in true disequilibrium.*

**5. Speed of Inputs Matter.** Most social systems have mechanisms to regulate or govern change. These mechanisms set or develop a tempo for change. Since each system and its mechanisms are unique, so is the process and speed by which they handle inputs and manage change. An important characteristic in our modern world is that the number and speed of system inputs are growing at a rapid rate. If a system cannot handle the volume or speed of these inputs, the system may not be capable of compensating quickly enough. In this case, even if the mechanisms that govern change are functioning, they may become increasingly overwhelmed. The system may be actively functioning to restore equilibrium but still in danger of slipping gradually into greater relative disequilibrium. Modern, open societies require mechanisms of social change that not only handle inputs but regulate the system in a timely manner. Flexible systems that evolve quickly are more likely to adapt to this increasing speed. Again, the American system is a good example. It is designed to evolve fast because it accommodates the value component instead of controlling it like other forms of governance. Change and adaptability are built into the system. Systems that cannot process inputs at a speed equal to or greater than they are received may become dysfunctional.

The speed of exogenous system inputs seems relevant to the globalization theory of conflict. Globalization is generally understood to be a spread of western ideas into foreign cultures brought about by modern telecommunications and global based economies. Some argue that the intrusion of western cultures or “civilization” into more traditional systems has resulted in increased global conflict. This globalization theory may in fact be viewed in systems terms. Globalization may in fact not be an issue of western influence but instead be a simultaneous problem of increasingly fast exogenous inputs and traditionally slow fragile systems. Traditional civilizations are systems. If they have not evolved or adapted to process an increased flow and rate of exogenous inputs, the system may become overwhelmed and thus move towards disequilibrium. The conflict attributed to globalization may in fact be an indicator of system value-environment imbalance and the process of social change occurring at a more rapid pace (and thus observable) than ever before. Globalization has been offered as a causal explanation for the rise of Al Qaeda and other militant traditionalists but given this *systems* framework, they can be seen as a result of system disequilibrium or dysfunction. Al Qaeda and their ilk are trying to preserve, revive, and spread a system that simply does not work.

Puritanical Islam as a political - social system does not work because it is structurally incapable of change and adaptation. This commentary is not concerning Islam as a religion which like other religions plays a crucial role in shaping a system's values. Islamic influenced government systems are and have been capable of success as systems but this commentary concerns Islam as a social system and form of government. Any generalization about a subject as diverse as Islam is dangerous so these comments are specific to puritanical versions of Islam, preached by radical political activists' such as Al Qaeda. The brand of Islam promoted by Al Qaeda is ideologically against change or adaptation. Its adherents believe it is *Allah's* will and thus perfect. Any attempt to change this ideology or system is an attempt to subvert *Allah's* will. Not all Islamic doctrine is so unchanging. Many Muslims believe in *ijtihad*, or the Islamic scholarly

process of adopting Islamic beliefs to changing times and circumstances.<sup>89</sup> The Salafists however believe that *ijtihad* is no longer possible. These puritanical views of Islam espoused by Islamists outlaw the application of human reason to holy texts and law which govern the structure and function of the system. As a result, they advocate a medieval system be applied in modern times without system adaptation. This brand of Islam as a system can be considered closed-inflexible. It is a system designed to resist social evolution. Islam as a medieval doctrine is designed to be static and purposely inflexible as a form of social control. An inflexible system can function if inputs are limited, as seen in the North Korea example but when the inputs can no longer be controlled, an inflexible system may be more inclined to dysfunction. Like all social organisms, Islam has of course evolved over time but at a more gradual pace than more modern forms of governance. Islamist rhetoric well illustrates the reluctance to any modern changes at all.

Today however, with the global proliferation of media, internet, and free markets it is nearly impossible to maintain a closed system. Short of total physical control such as in North Korea, traditional systems are increasingly transitioning from closed to open systems. Therefore, traditional systems that were once able to function as closed-inflexible systems are now transitioning to open-inflexible systems. Al Qaeda's perfect Islamic system is now an open-inflexible system. The system can no longer control the rate of speed of exogenous inputs. Medieval Islam is a system designed to fight against the characteristics of all living systems... openness and change. We are not suggesting that evolution within an Islamic system equates the adoption of "western" values or even the form of any recognizable existing government, but simply that to fight social change is a losing battle. As a system, Islam could currently be categorized as in disequilibrium or close to it. It will either die as a social system (not as a religion) or undergo some fundamental system change to restore itself. This revolutionary process of change could be considered an impending "re-formation" of the Islamic system.

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<sup>89</sup> Mary R. Habeck, *Knowing the Enemy; Jihadist Ideology and the War on Terror* (New Haven: Yale University Press, 2006), 10.

Globalization may be the modern phenomena of transitioning systems from closed to open at the same time the speed and rate of exogenous inputs is rapidly increasing for everyone. Flexible systems are more likely to adapt and survive. Governments who fail to recognize this and implement policy accordingly will eventually find themselves governing systems in disequilibrium.

**6. Roles of Governments.** Politics and the government are mechanisms created to control the social system. There are many types of governments but in general they are a system mechanism that possesses the power to regulate the rest of the system. In the context of the value-environment construct, governments have the role to restore or maintain dynamic equilibrium. The government, or a legitimate authority, of that particular social system is charged with maintaining the health of the system. As discussed in Chapter II, this role comes with control over the use of force. Governments manage the system by using the same process of inputs into both the value and environment components.

Many of the inputs made into the system by various endogenous and exogenous agents conflict. This results in a routine battle of inputs. Figure 10 graphically represents this process. In this illustration, the government makes system inputs to maintain system balance while external agents make system inputs from outside the system boundaries. This results in an iterative process of input and counter input. In this example the government, as a component of the system, does not have direct control over the endogenous actors who exist outside the system boundary. DETT is specifically concerned with this struggle between the legitimate authority and external actors who use terrorism. As terrorists try to create a relative disequilibrium, the government tries to do two things. They must try to stop the inputs from occurring and manage the dynamic equilibrium of the system.

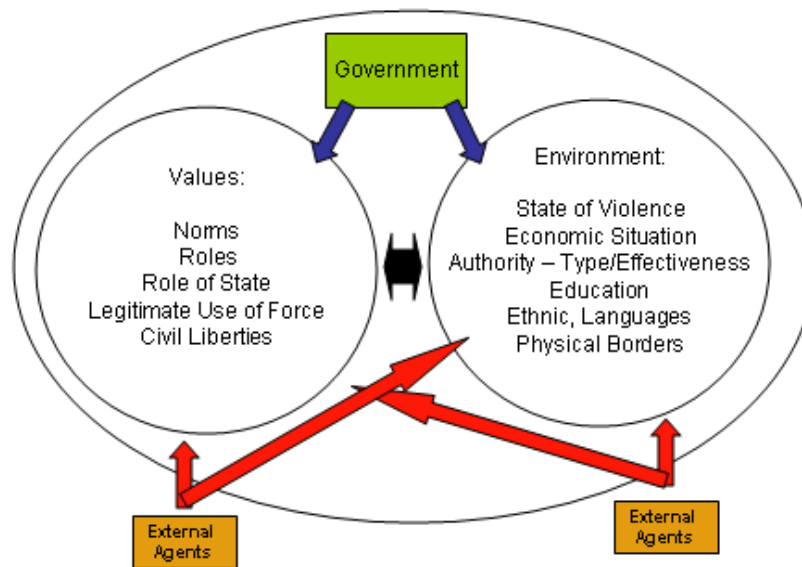


Figure 10. Government Versus External Agent Inputs

If a government does not recognize this dynamic process, it is in danger of enacting policies (making endogenous inputs) that further imbalance the value-environment relationship. Government changes to the environment that appear productive may in fact imbalance the system even more. This is one of the reasons that a democratic system of government is far less vulnerable to terrorism. Democracy, as a relatively open system results in greater susceptibility to the act of terrorism but flexibility limits its overall effect. Mature and functioning democratic governments are designed around a feedback loop from the population. This feedback informs the government on what system inputs are necessary. A democracy essentially tells the government what the collective value is and what they want the environment to look like. As in the security to civil liberties example discussed previously at Figure 6, the components or agents inform the government what system changes they will and will not accept.<sup>90</sup> The system has a direct feedback mechanism to the management of the system.

<sup>90</sup> Figure 6 depicted a recent Pew Center survey that found a split in American beliefs regarding security and civil liberties. Feedback from the population to the government is critical in a democratic system.

This feedback loop may not exist in other forms of government or less mature democracies whose feedback loops are not functioning. Democracy as a functioning system is far different from a democracy in name only. Other forms of government are left to make decisions and system inputs without the benefit of a value feedback loop. The implications on government counterterrorism policy development are profound.

To counter the terrorist inputs of an external actor, the government may not have to respond to the specific terrorist act. All government counterterrorism policies should at least consider system maintenance of dynamic equilibrium. If government actions destabilize the system over the long term, are the short term benefits of those policies worth it? Terrorism is effective because it attacks directly at the system level, forcing some degree of disequilibrium. If government counterterrorism measures create further relative disequilibrium, the terrorists will achieve social change.

## **G. CONCLUSION**

The preceding material outlined the dynamic equilibrium theory of terrorism. DETT is a systems approach to understanding the system level impact of terrorism on a society. This approach provides insights as to how terrorism works and how a government can react more effectively. Terrorism is a tactic that is chosen because it is perceived to work as a tool for social/political change. It is a violent input to the environment at immediate and recognizable odds with a system's values and as such decreases the equilibrium between the two. It increases the level of disequilibrium but does not necessarily result in true disequilibrium. The incongruence of this relative disequilibrium between the value-environment components can be measured. A sample scale of 1-100 was used in this chapter and will be further explored in Chapter V.

The homeostatic characteristic of dynamic equilibrium then tends to drive changes within the social system in an effort to restore this value-environment equilibrium. The greater the disequilibrium, the more changes may be required. Therefore, terrorism can induce political/social change by targeting social system equilibrium.

Terrorism works to spur changes in social systems but rarely achieves its intended objectives. Every system is unique and thus, inputs of terror may force change easily in one system but not in another. For this reason, each society and government will be impacted by and respond to similar types of terrorism differently. A resilient social system designed to adapt quickly, is less vulnerable to terror inputs. Each system is unique but with a clear understanding of the system and the use of DETT, it may be possible to predict how certain terrorism inputs may impact the system and thus which counterterrorism policies will be effective. This process is represented as a process in Figure 11.

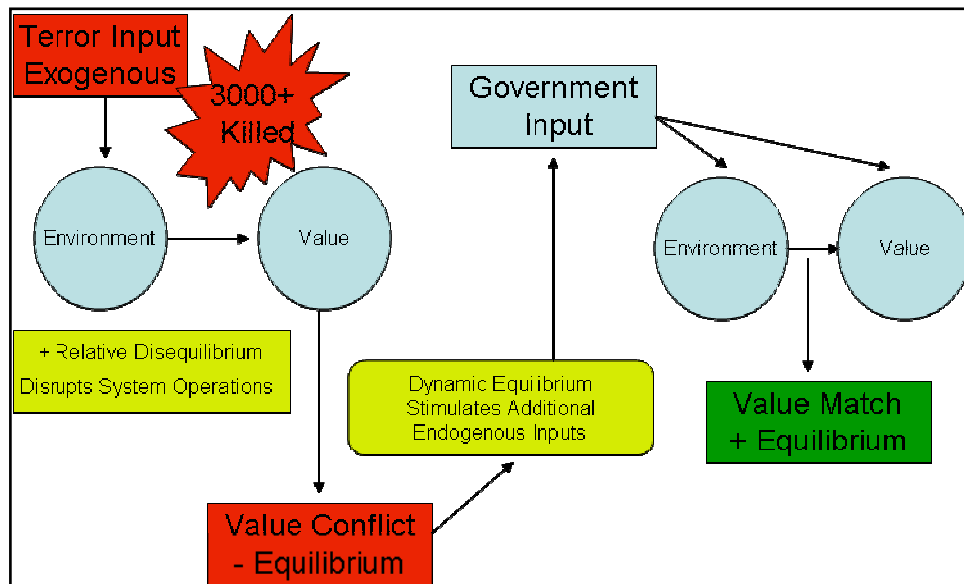


Figure 11. DETT Process

If this input of terrorism moves the system too far out of equilibrium, disequilibrium may occur. A state of disequilibrium exists when the system cannot function using its existing structure or organization. In this situation, the mechanisms that normally govern change are no longer adequate to equalize the system. Recovery from disequilibrium will result in structural or functional changes that may result in a fundamentally different system. Disequilibrium will most likely be associated with socially motivated violence.



DETT can be a useful tool to understand social system change and how terrorism works. This chapter concludes the theoretical explanation. An analysis using terrorism inputs and data is now required to demonstrate the theories usefulness.

## **V. AL QAEDA, 9/11, AND THE AMERICAN DYNAMIC EQUILIBRIUM**

### **A. CHAPTER OVERVIEW**

**1. Testing the Dynamic Equilibrium Theory of Terrorism (DETT).** The DETT was developed in an attempt to understand the impact of terrorism on a social system and in so doing help us to implement more effective counter-terrorism policies. This chapter will use Al Qaeda and the 9/11 attacks to assess the theory's validity.

This chapter will initially identify Al Qaeda's three strategic objectives in order to examine how the attacks of 9/11 were intended to achieve their most immediate and (minimal) goal. Al Qaeda intended to change American policy by disrupting the American social system equilibrium. This chapter will then analyze the impact of 9/11 on the American system in order to demonstrate the validity of dynamic equilibrium and DETT as a useful analytical framework.

**2. Analysis.** The tremendous complexity of the U.S. social system necessitates our analysis to focus on a variety of important easily observable sub equilibriums. Specifically, this chapter will divide the overall U.S. social system equilibrium into:

- Economic sub equilibrium
- Government sub equilibrium
- National security sub equilibrium.

This analysis will then demonstrate how the environmental input of the 9/11 attacks impacted system equilibrium and how the system responded. This analysis uses polling data to illustrate the changing relationship between values and environment in the equilibriums of the three subsystems in question. These phases will then be analyzed and compared to determine the impact of 9/11 on overall system equilibrium.

This chapter includes an empirical assessment of equilibrium at certain points in time. This assessment was needed to analyze the general state of equilibrium pre and post 9/11 in order to validate the central arguments of DETT. These empirical assessments are based on data and changes in data but were assessed specifically to chart the general state of equilibrium. The specific numerical assessment should be given less weight than the general state and trend of changes. The general formula that guided this assessment conceptually is shown at Table 1 below. This table describes an equation used to determine numeric value for equilibrium. The environment (E) is assessed a value of 1-100. Likewise, the value (V) component is assessed a separate value from 1-100.<sup>91</sup> Equilibrium is then calculated as  $V/E$  or simply the percentage of V that corresponds to E. Disequilibrium (DEQ) is the percentage of V that does not equal E. Once a value has been assessed for EQ and DEQ, they can then be graphed to determine change as seen in the sample chart at Figure 12.

Table 1. Sample Equilibrium Calculation

Phase	Environment (E)	Value (V)	Equilibrium (EQ)	Disequilibrium (DEQ)
	1-100	1-100	% Environment which equals Value ( $EQ=V/E$ )	
Pre 9/11	100	75	.75	.25
9/11	100	60	.60	.40
Post 9/11	100	60	.70	.30

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<sup>91</sup> Noticeably missing from this equation or analysis is an explanation or criteria for that V or E assessment. This criterion is not part of this thesis and not used here but would be specific to the system being examined and the intent of the research. This chapter is an effort to only chart changes in general equilibrium and not establish a scientific equation and assign definitive values.

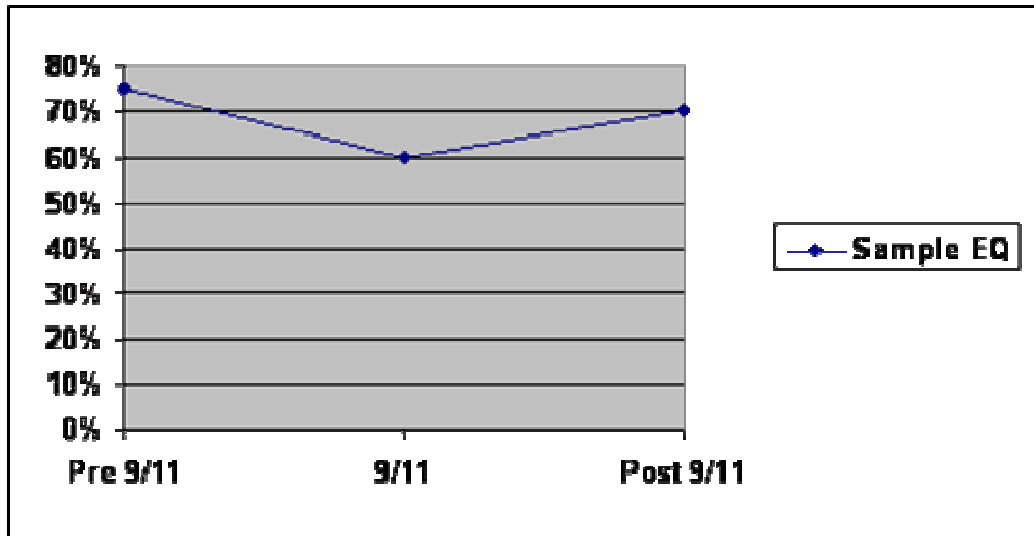


Figure 12. Sample Equilibrium Change Chart

This equation is used in this chapter to analyze and graph equilibrium changes. The general state and changes in equilibrium are necessary here, not the specific value assigned to each variable, for purposes of demonstrating the validity of social equilibrium theory and thus DETT.

One of the primary data sources for this analysis is Pew Center polling and survey data. Poling data allows certain assertions on equilibrium to be made without a detailed empirical analysis of the E variable. Specifically here, *public attitude surveys* are used as direct indicators of value to environment agreement. These Pew Center products represent the public agreement with a specific issue in the environment. Instead of deriving equilibrium data by calculating  $V/E$ , polling data presents an approximation of this balance as “XX% of population agree/disagree with...” or XX% of  $V = E$ . If used correctly, polling data can act as an indicator of approximate equilibrium and disequilibrium levels. Multiple sets of polling data are used to examine, graph, and estimate the overall state of equilibrium.

For this analysis, the data are then grouped into three time periods:

- Pre 9/11 (to establish a base for analysis)
- Immediately after 9/11 (to determine immediate impact)
- After 9/11 (to determine a “lasting impact”)

These sets of data will be arranged to show a numerical change for each sub equilibrium over time. They will then be combined and charted to determine the approximate state of American dynamic equilibrium before, during, and after 9/11.

*Pre 9/11* data ranges from 1999 to early September 2001. *Immediately after 9/11* utilizes data from September 2001 until approximately September 2002. Data from September 2002 – spring 2003 are lumped together to generalize the *lasting impact* of 9/11. It was decided to partition the data of this last phase to end at the onset of the Iraq War. The purpose of this analysis is to determine the 9/11 effect on equilibrium and thus social change; it was assumed that data points after the Iraq invasion could potentially skew the analysis. As a significant emotional national event, the Iraq war has altered both system values and environment in ways unrelated to 9/11. Any national polling data after the invasion of Iraq concerning the government, military, national security, or economics is likely to be effected.

## **B. AL QAEDA’S STRATEGIC OBJECTIVES**

Al Qaeda is more than merely a terrorist group and the Global War on Terrorism (GWOT) is more than a war against the acts of terror. Rather, Al Qaeda is the self appointed vanguard for a global Salafist insurgency with global aims and a long term strategy. They are a violent Islamic right-wing radical activist organization. As radicals they are inclined to use any means, too include terrorism, to achieve their religious political objectives.

The failure to properly identify and distinguish between Al Qaeda’s different objectives can lead to an underestimation of Al Qaeda’s long term strategy. Below we

discuss their strategic objectives. These objectives can be categorized as minimal, intermediate and maximal and have important implications to their short, mid, and long term objectives.<sup>92</sup>

**1. Minimal:** The Islamist's most immediate and minimal objective is to "liberate" territory from governments that they view as apostate. The specific territory to be freed varies by group or cause but Al Qaeda and Osama Bin Laden strive to "free" all majority Muslim countries from non Islamic governments. Bin Laden is particularly interested in the control of his native Saudi Arabia while al-Zawahiri is concerned with his native Egypt. Al Qaeda's minimal objective is regional but they believe attacks against the West can further those objectives. They view America as propping up "puppet" governments in the region. In order to remove these "puppet" governments, Bin Laden believes he must sever them from their American support.

Bin Laden has been very clear about his immediate objectives and the intent of 9/11. In his 2002 *Why We Are Fighting You*, Bin Laden explains exactly what he intends to achieve in the short term. He instructs Americans that we should stop supporting Israel, withdraw from "his lands", stop supporting "corrupt" regimens or else his *mujahedin* will bring the fight to American shores. Al Qaeda wants the United States out of the Middle East so his ilk can take religious, political, and social control to institute *sharia* law (more specifically his puritanical brand of Sunni Islam). The impact on America would include the eventual destruction of Israel, abandoning all secular regional allies, severing all financial ties to the region, and allowing human rights disasters of biblical proportions.

Al Qaeda's minimal objective is regional but to achieve this they view terrorism against western targets as an effective strategy. During this phase, attacking the "far enemy" (America and Europe) are means to weaken regional targets such as Saudi Arabia and Egypt. Specifically, Bin Laden intends is to disrupt the American economic equilibrium. The direct financial damage caused by terrorism attacks is relatively minor

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<sup>92</sup> Jeffrey M. Bale, "Al-Qa'ida's 'Strategic Thinking': An Illustrative Example of the Impact of Ideological Extremism on Terrorist 'Rationality'" (unpublished manuscript, Monterey Terrorism Research and Education Program Monterey Institute of International Studies, Monterey, 2007).

but the indirect costs in lost business, consumer confidence, and increased spending can be enormous and thus the real danger to system equilibrium. Therefore it is the system's economic response to terrorism and not terrorism itself that threatens economic equilibrium.

Terrorism is coercive because we fear future attacks. The potential future attacks are why we do not fly after a hijacking or invest in the stock market after an attack on Wall Street. By demonstrating a capability to strike us domestically and promising future attacks, Al Qaeda's strategy to achieve its immediate/minimal objective is to coerce the American economic system. Osama Bin Laden believes that if he can disrupt our economic equilibrium, the system will respond with a change in policy that favors his regional objectives.

**2. Intermediate:** Al Qaeda's intermediate strategic objective is to recover all territory once under Muslim rule.<sup>93</sup> Muslim geographic control peaked in the 1500s when it stretched across North Africa, the Middle East, Central Asia, Northern India, Spain, Italy, and portions of China. Once Al Qaeda secures an Islamist sanctuary in the Middle East, they intend to move against these "lost Muslim" lands. Although the United States is not directly threatened geographically by this intermediate objective, any Al Qaeda progress toward it would obviously be unacceptable to the international community.

**3. Maximal:** Al Qaeda's ultimate goal is global -- the restoration of the *caliph*. No matter how unrealistic it may seem from a western perspective, Al Qaeda's long term objective is a global Islamic theocracy. Bin Laden is careful to not publicize these objectives too clearly to westerners but is very open about these objectives in his Arab writings:

Muslims are obligated to raid the lands of the infidels, occupy them, and exchange their systems of governance for an Islamic system, barring any practice that contradicts sharia from being publicly voiced among the people, as was the case at the dawn of Islam.<sup>94</sup>

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<sup>93</sup> Bale, 20.

<sup>94</sup> Raymond Ibrahim, *The Al Qaeda Reader* (New York: Broadway, 2007), 51.

Although the realization of these objectives is seemingly impossible, it is important for us to understand the strategic objectives of our enemy as we analyze their tactics. The attacks of 9/11 were conducted to disrupt the American equilibrium and thus further Al Qaeda's minimal or short term objectives. Al Qaeda's minimal objectives are the most immediate to counterterrorism policy but we must also consider the longer term objectives. A truly effective policy stymies both short and long term objectives. A policy that defeats Al Qaeda in the short term but facilitates their longer, more intermediate objectives is not a successful policy. This is an area where general systems thinking and DETT can be of value. It can be used to understand the longer term system dynamics and unintended consequences of certain policies.

### **C. ECONOMIC SUB-EQUILIBRIUM.**

**1. Economic Sub-Equilibrium.** The American economy is Al Qaeda's primary target. They intend to disrupt the dynamic equilibrium between the economic environment and the system's economic value or beliefs. Al Qaeda believes that by creating disequilibrium between the two, the system will be forced to make policy changes to restore this balance. In their eyes, America's center of gravity is its economy. Bin Laden believes that Americans cherish money and luxury over all other things and if he can damage our economy, the American public will demand withdrawal from the Middle East. This section will first examine the pre 9/11 economic sub equilibrium in order to establish a baseline for comparison. Once a baseline is established, we can compare how 9/11 impacted this equilibrium over the short as well as longer term.

**2. America's Pre 9/11 Economic Sub-Equilibrium.** In the late 1990s the American economy was strong. Fueled by a high tech boom, the American economy was growing at a record pace. However, beginning in 2000 there was a realization that the economy was overheated and much of the publicly traded high tech companies responsible for the boon were largely overvalued. In late 2000 and early 2001, before 9/11, many financial experts agree a downturn was underway. Different economic



indicators point to different start points of the actual “recession” but all indicators show that the economy was on a downward turn before 9/11. The “dot.com” bust in March 2000 was the most likely starting point.

The 2000 government budget was a staggering \$1.8 trillion. In 2000, the per capita gross domestic product (GDP) was \$35,314. By all financial measurements America was a financial juggernaut and Americans enjoyed a very high standard of living. However, although the economic environment was superb, equilibrium is measured as a balance with the value component. The high standard of living and record profits also impacted expectations. Americans expected record profits and thus any downward movement in the economic environment would trigger some degree of value-environment imbalance. Prior to 9/11 the American economy had already experienced several quarters of negative economic indicators. Even during this time of historic wealth only 68% of Americans surveyed agreed that they were “pretty well satisfied” with the way things are going for them financially.

The pre 9/11 economic environment was superb but beginning a downward turn while economic values were in flux. The economic value-environment relationship is assessed to be a 90% prior to 9/11 as illustrated at Table 2.<sup>95</sup> The economy was historically strong in the late 90’s and by 2001 the per capita GDP was still historically high.

Table 2. Pre 9/11 Economic Calculation

Phase	Environment (E)	Value (V)	Equilibrium (EQ)	Disequilibrium (DEQ)
	1-100	1-100	% Environment which equals Value (EQ=V/E)	
Pre 9/11	100	90	.90	.10

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<sup>95</sup> Survey data reflects a 68% satisfaction but this indicator dealt specifically with “individual” and not collective satisfaction. An analytical assessment was made to adjust the overall V/E ratio by 20% to account for agreement not identified in this polling data.

This leaves a small level of disequilibrium (.10) but this was on the rise as 9/11 got closer. Values were rising to meet the new economic environment at the same time when the economy began to cool and then begin a downward slide. Al Qaeda's timing was excellent.

**3. Immediate Impact of 9/11 on Economic Sub-Equilibrium.** The actual attacks of 9/11 had significant immediate impact. The immediate direct costs of the attack were estimated at \$27.2 billion. These costs included the destruction of assets, rescue operations, and immediate clean up costs.<sup>96</sup> Moreover there were considerable Indirect costs resulting from the closure of financial markets and national airspace. Airspace closed until 13 September and the lack of airline passenger confidence resulted in airline federal funding "bailouts" as numerous airlines tilted on the brink of bankruptcy.

The economic forecast was immediately downgraded. Experts expected GDP to drop .5% for 2001 and a significant 1.2% through 2003 for an estimated loss of half a trillion dollars.<sup>97</sup> As expected, GDP did decrease in the third quarter. The physical attacks on 9/11 altered the economic environment and immediately caused a degree of disequilibrium. It had significant initial impact but no where near as damaging as Al Qaeda had hoped or economists initially predicted. Amazingly, against expert forecasts and Al Qaeda's desires, GDP rose in the fourth quarter of 2001.

The system responded to the environment change, limited the economic impact, and prevented the system from greater economic disequilibrium. The government responded swiftly (and in hindsight, correctly) with "good economic crisis management."<sup>98</sup> Immediate counter measures included value inputs to restore public confidence and environment inputs in the form of lower interest rates, liquidity, and increased government spending. By the end of 2001, 66% of Americans surveyed agreed

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<sup>96</sup> Robert Looney, "Economic Costs to the United States Stemming from the Attacks of 9/11," *Strategic Insights* 1, no. 6 (2002), <http://www.ccc.nps.navy.mil/si/aug02/homeland.asp>. (accessed 25 November 2007).

<sup>97</sup> Looney.

<sup>98</sup> Looney .

that they were “pretty well satisfied.” This was only a 2% drop in economic satisfaction after the worst terrorist attack in our nation’s history. Immediately after 9/11, the economic equilibrium is assessed to have dipped to a value of 80. This value was assessed as an initial 20% drop based on direct costs of 9/11, a drop in consumer confidence, the drop in GDP, and population survey data. However, the government response which resulted in airline solvency and a recovered GDP prior to the end of this time phase resulted in only a 10% drop.<sup>99</sup> Although the initial dip may have been lower, immediate economic counter inputs saved the overall rating for this period of time.

Table 3. 9/11 Economic Calculation

Phase	Environment (E)	Value (V)	Equilibrium (EQ)	Disequilibrium (DEQ)
	1-100	1-100	% Environment which equals Value (EQ=V/E)	
Pre 9/11	100	90	.90	.10
9/11	100	80	.80	.20

September 11 was a shock to the economic system. The initial shock created some disequilibrium but government counter inputs quickly limited the level of disequilibrium that occurred.

**4. Lasting Effects on Economic Sub-Equilibrium** The longer term effects of 9/11 may not be definitively calculable. The economy is intertwined with many diverse variables and inputs not related to 9/11 which impacted the economic sub equilibrium. However, enough evidence exists to asses a general state of equilibrium.

Today, the 2007 gross domestic product for 3<sup>rd</sup> quarter is an estimated \$13,926.7 trillion while the federal budget alone is \$2.66 trillion. Today’s American standard of living is high, boasting an estimated \$43,500 per capita GDP. Add to these numbers a

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<sup>99</sup> These are the authors own analytical estimates.

steady 4.8% unemployment rate and a low inflation rate of 2.5% and most indicators show a healthy economic environment. By all measures, the system responded well and the post 9/11 economic environment is positive.

GDP per capita is a good data set to determine changes economic environment. Figure 1 lists the changes in per capita GDP from 1999 to 2005. These data are adjusted to 2002 dollars to better graph the true changes without being skewed by inflation. The graph demonstrates that the economic environment was rising until early 2001 and then began to dip. 9/11 resulted in a decrease in GDP decrease for only a short time until mid 2002. The per capita GDP then leveled and began a steady climb which continues into 2005.

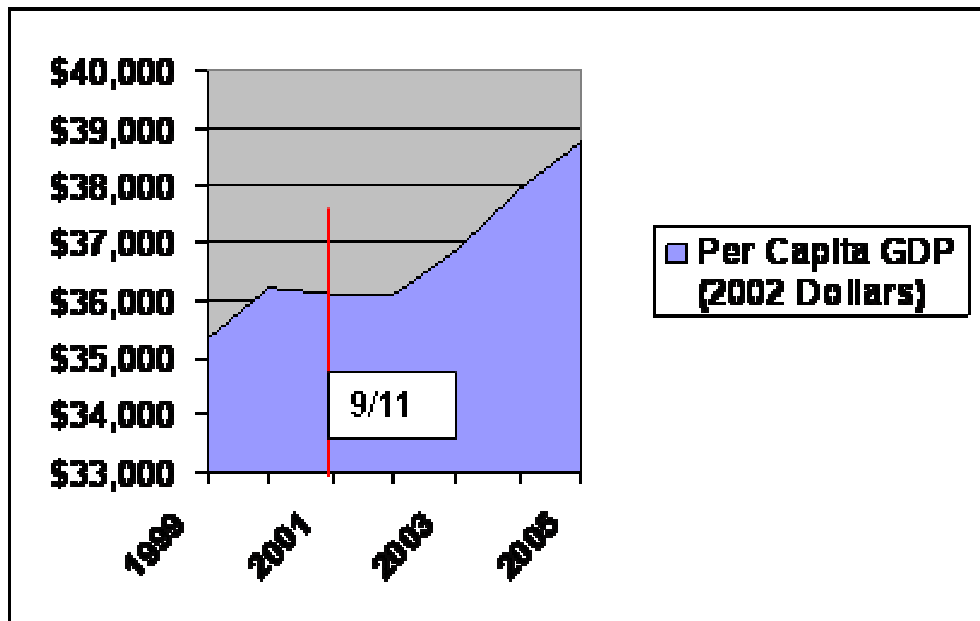


Figure 13. Real Per Capita GDP (adjusted using 2002 dollars)<sup>100</sup>

Even though per capita GDP can represent a healthy economic environment, equilibrium is based on the value-environment relationship. While the economic environment was improving in 2002 and 2003, the system's attitude toward the

<sup>100</sup> U.S. Department of Labor, Bureau of Labor Statistics, "Comparative Real Gross Domestic Product per Capita and per Employed Person." U.S., Office of Productivity and Technology (2007), <ftp://ftp.bls.gov/pub/special.requests/ForeignLabor/flsgdp.txt> (accessed 13 September 2007).

environment was not. As illustrated at Figure 14, in 1999 68% of Americans surveyed agreed that they were “pretty well satisfied” with their own economic situation. In 2002 that percentage fell 2% to 66%.<sup>101</sup> This can easily be explained by the immediate economic impact and flattening GDP numbers post 9/11. However, Figure 14 also shows that in 2003 while the per capita GDP was improving, only 63% of Americans surveyed agreed that they were “pretty well satisfied” with their own economic situation.<sup>102</sup>

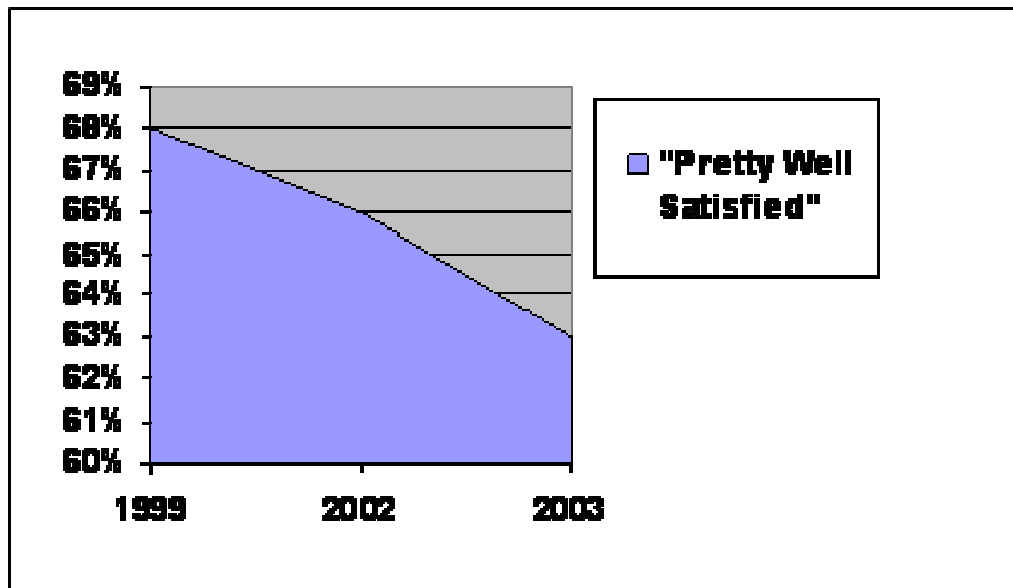


Figure 14. National Economic Satisfaction

The economic environment was improving but the attitudes of collective economic value were not. There were many complex economic variables that play into this; most notably the recession that began in late 2000 and ended in 2003 but 9/11 certainly had a hand in creating some degree of economic disequilibrium.

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<sup>101</sup> The Pew Research Center; For the People and The Press, *Trends in Political Values and Core Attitudes: 1987-2007* (Washington, D.C.: Pew Research Center, 2007).

<sup>102</sup> The Pew Research Center.

**5. 9/11s Impact of the Economic Sub Equilibrium.** By 2003 the physical economy had recovered from the recession and impact of 9/11. However, the collective system economic value had not. It is still a very healthy level of equilibrium. Al Qaeda was successful in causing some immediate economic impact but the system responded effectively to mitigate the immediate impact and eventually improved the economic environment. Table 4 illustrates the numeric assessment of equilibrium. Prior to 9/11 the economic equilibrium was assessed as 90 based on a strong economy and general economic satisfaction. After 9/11 economic equilibrium dipped to an estimated value 80 during the months after 9/11, and then rebounded slightly.<sup>103</sup> The post 9/11 value is assessed as 85 indicating a slight rise, but as of 2003 the system had not fully adjusted to pre 9/11 equilibrium levels.

Table 4. Economic Equilibrium Changes

Phase	Environment (E)	Value (V)	Equilibrium (EQ)	Disequilibrium (DEQ)
	1-100	1-100	% Environment which equals Value ( $EQ=V/E$ )	
Pre 9/11	100	90	.90	.10
9/11	100	80	.80	.20
Post 9/11	100	85	.85	.15

Al Qaeda was partially successful in their efforts to change economic equilibrium over the longer term. This analysis must be combined with other sub component equilibriums to determine the overall effect of 9/11 on total system equilibrium.

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<sup>103</sup> These values were assessed by looking at a broad range of economic data and surveys. These assessed values are not a direct correlation to data but instead this analysis' estimate of overall economic behavior and public (value) attitudes to that environment. A much more detailed assessment would be required beyond the scope of this paper to establish an equation to assess specific economic equilibrium. These are estimates of overall behavior.

## **D. GOVERNMENT SUB-EQUILIBRIUM.**

**1. Government Sub Equilibrium.** The government is both a system component and a system driver. It acts as the system maintainer. As a democratic system, the American Government is highly sensitive to feedback from the population (or other components of the system) and uses this feedback to govern the system. The government sub equilibrium is a balance between what the government does (or is) and how the system believes it should do (or be). The structure and mechanisms of the American government system will not be reviewed here, the following section is only concerned with examining the state and changes in system value-environment relationship as a result of 9/11.

**2. Pre 9/11 Government Sub-Equilibrium.** The government sub equilibrium is inherently in flux. Its very structure, the activism of our population, amplified by modern media makes for a fast paced, reactive, and changing system. At the individual level this may appear chaotic and dysfunctional but is a desirable quality for a social system's survival over time. Since the value component is inherently a collective sentiment, public opinion polls are a good way to gauge the government sub equilibrium. However, most polling data focuses on specific political issues or personnel, not on the government sub component as a whole. Therefore, this section used poll data on multiple government mechanisms to assess the state of equilibrium.<sup>104</sup>

One set of polling data useful for our purposes is election and voting data. In the 2000 Presidential election, 129,549 million people or 69.5% of the eligible population were registered to vote. Of that, 110,826 citizens or 59.5% of the total eligible population (85.5% of those registered) actually voted. The percentage of a population that registers to vote may indicate confidence that the government system can change via normal system mechanisms. This would indicate that 69.5% of the population registered to vote and thus believe it is an effective system.

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<sup>104</sup> Dislike of elected leaders is evident in polling but can easily be misinterpreted as a dislike of the government system. Polls were valuable in this analysis but must be used carefully to cull out the popular dissatisfaction with politicians or issues of the day in order to decipher the state of government sub equilibrium.

The percentage of registered Americans also closely matches polling data which reflects a majority of Americans voters believe that “voting gives me some say about how the government runs things.” In 1999, 73% of respondents agreed with this statement.<sup>105</sup> This indicates that a high percentage of the system believes the electoral system works.

The change in approval/popularity ratings for multiple government agencies over time may also demonstrate an overall system value shift in relation to the governmental environment. A comparison of pre and post 9/11 popularity ratings for multiple government mechanisms, may reveal the impact of terrorism on the government sub equilibrium. President Bush has been in office prior to, during, and after the attacks so the change in his approval ratings offers some interesting data. In February 2001 53 % of respondents approved of his “handling his job as President.” The President is only one mechanisms of government (and always a polarizing one) so the use of multiple government mechanism is useful. A less polarizing government mechanism is the military. In July of 2001, 6 weeks before 9/11, 81% of the population had a favorable opinion of the military. The combination of these two data points indicates a general governmental value-environment balance prior to 9/11.

Aside from the day to day disagreement in politics, a 1999 Pew survey found that only 3% of those surveyed stated that they “*never* trust the government in Washington to do what is right.” This leaves a staggering 97% of the population that believes the government will “only sometimes, most of the time, or just about always” do what is right.

The above data indicates an equalized government sub equilibrium. This assertion may seem counterintuitive given the venomous bi partisan politics, conflict generating media, and seemingly fragmented popular attitudes of our time. However, based on system characteristics discussed throughout this thesis; these seemingly chaotic and dysfunctional individual and group level indicators are actually a healthy sign of a flexible, open, living system. So although popular opinion seems to indicate there is distrust of politicians and specific issues, our collective value overwhelmingly believes in

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<sup>105</sup> The Pew Research Center, 82.



the government environment. The American government environment is generally equalized with governmental values. Table 5 summarizes the data used to make the equilibrium assessment. Initial pre 9/11 government equilibrium is assessed as 70.<sup>106</sup>

Table 5. Pre 9/11 Government Equilibrium Assessment

Gov EQ Data	Overall Pre 9/11 Assessment of Government EQ
69% Registered to Vote	70% Average Approval Rating Across Different Government Mechanisms
73% Positive Poll Data on Electoral Process	
53% Presidential Approval Rating	
81% Military Approval rating	

With that baseline established, was Al Qaeda successful in disrupting that equilibrium?

**3. Immediate Impact of 9/11 on Government Sub-Equilibrium.** The attacks of 9/11 took everyone, too include the government by surprise. The timing immediately after 9/11 was critical, government action or inaction could have pushed the system towards disequilibrium. Immediately after the attacks, questions arose as to the government culpability in its failure to prevent the attacks. These questions became a major political issue that had potential to disrupt the value-environment relationship but eventually did little to disqualify the government sub equilibrium.

Actions by the government immediately after the attacks were critical to the restoration of system normalcy and ultimately to government value-environment balance. The government worked swiftly to organize federal assistance that minimized impact on

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<sup>106</sup> The average of this data was approximately 70%. This indicated a 70% public approval rating across several different mechanisms of government.

the system and prevented future disruptive inputs. An October 2001 poll provides evidence that the government response was effective. This poll reports that 84% of respondents agreed that the government was doing a fairly or very well job in reducing the threat of terrorism. Only 11% of those asked believed the government was not doing well.<sup>107</sup> Some of the government responses to 9/11 are examined here.

Immediately after the attack, the government conducted massive immigration sweeps eventually detaining 768 aliens as “special interest” violators.<sup>108</sup> Many of these violators were deported and six were actually found to be linked to terrorist groups. An Al Qaeda operative also stated that these immediate actions served to limit Al Qaeda movement in the United States.<sup>109</sup> Although some at the individual and group level saw these as counter productive, these actions were seen by the majority of the system as a sign of strong action. The impression of progress against potential 9/11 conspirators had an equalizing effect on the system, regardless of its actual tactical successes. Collectively, there was a realization after 9/11 that some personal freedom is inherently relinquished to the government for collective security.

From a practical stand point, there were holes in the government system that allowed the attacks to occur. The government took immediate steps to close some of those gaps. Less than a week after the attack, draft legislation was circulating that would eventually become the USA PATRIOT Act. It gave the government expanded powers to investigate and detain potential terrorists. Its most immediate function was to facilitate information sharing between law enforcement and the intelligence community. Another immediate government action was the development of the White House Homeland

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<sup>107</sup> The Pew Research Center; For the People and The Press, *Trends in Political Values and Core Attitudes: 1987-2007* (Washington, D.C.: Pew Research Center, 2007), 110.

<sup>108</sup> Issues such as these “special interest detainees” and the USA PATRIOT Act are examples of government programs or counter inputs that may initially have an equalizing effect but later become disequalizing. Initial action by the government was seen as strength but later may be reinterpreted as illegitimate activity. This paper argues that government actions led to an increase in government equilibrium which helped to buoy decreases in other sub equilibriums. However, as time passes and the initial action or policies of the government are more closely examined, the support for these policies can decrease. The policy of detainees and the PATRIOT Act are examples.

<sup>109</sup> National Commission on Terrorist Attacks, *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the United States*, (New York: W.W. Norton and Company, 2004), 328.

Security Council and staffing of the Office of Homeland Security. It was recognized that homeland security as a system mechanism was too diffuse and complicated to handle without a single governing body. This office was to later become the Department of Homeland Security (DHS). As discussed in Chapter IV, the system recognized its own deficiency, an outdated control mechanism, and adjusted. This homeostatic process was a direct response to exogenous Al Qaeda inputs. Critics argue that DHS is a flawed or unnecessary organization but its creation had an equalizing effect. Like most living organisms it will evolve and probably become more effective over time.

Finally, the most notable system reaction was the United States invasion of Afghanistan. Combat operations commenced in Afghanistan on 7 October to hunt down Al Qaeda and remove the Taliban from power. This was a system exogenous output to prevent/limit future Al Qaeda inputs to our system. Within our system, it had a positive effect. The invasion was overwhelmingly supported.

While there was certainly blame that the government had made mistakes prior to 9/11, the immediate effect was a wave of national unity and support for the government. Presidential approval ratings surged after 9/11 to almost 90% and by February 2002 were still at 78%. This was an overall increase of 25% from 2000. Overall, in 2001 57% of respondents agreed that they were “satisfied with the way things are going in this country” up 6% from the year prior. In the context of 9/11 this is an important statistic. After the worst terrorist attack in history, and amid accusation of government complicity, the system was more satisfied with its environment than the year prior. The immediate impact on government value-environment equilibrium may have had the opposite effect than Al Qaeda intended... it improved. For assessment purposes, we assess the government equilibrium as increasing by 10% to a total of 80 during the immediate period after 9/11. Table 6 below summarizes the data used to make this assessment.

Table 6. 9/11 Government Equilibrium Assessment

Gov EQ Data	9/11 Assessment of Government EQ
84% Approval of Government Counterterrorism Efforts	<p>+10%</p> <p>80% Average Approval Rating Across Different Government Mechanisms</p>
+6% Increase on Positive Survey Data	
78%-90% Presidential Approval Rating	
90% Military Approval rating	

The immediate impact of 9/11 on the systems government did not create disequilibrium; it decreased it by 10%.<sup>110</sup> The normal mechanisms of government reacted appropriately to the system shock and thus had the effect of reinforcing system support for its government. This sub equilibrium significantly added to the overall system stability. The next question is whether that positive effect lasted or was it temporary?

**4. Lasting Effects on Government Sub-Equilibrium.** The government sub system responded as the DETT hypothesis argues. 9/11 was an input that changed the environment. That change created an immediate value-environment imbalance that was acted upon because of the characteristic of dynamic equilibrium. This characteristic normally dictates change directed toward system equilibrium. In response to 9/11, the government sub equilibrium was increased. However, this analysis shows some signs that changes which initially led to greater equilibrium have a diminishing return and may lead to some increase in disequilibrium over the long term.

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<sup>110</sup> This assessment is based on the overall increase in all indicators examined. Polling data indicated an increase in approval in all government areas; Presidential and military approval rating went up. A direct empirical correlation can not be supplied here as the survey and poll data used to determine pre and immediate 9/11 effects are different. However, all indicators examined immediately after 9/11 increased by at least 10%.

The creation of the Department of Homeland Security was a massive reorganization of the federal government. It initially included over twenty agencies and 180,000 employees from disparate corners of government to include the Customs Service, the Immigration and Naturalization Service, the Coast Guard, the Secret Service, the Transportation Security Administration and the Border Patrol. It was tasked to coordinate homeland security efforts within the federal government and with state and local officials and the private sector as well. The importance of DHS to the system is two fold. First, there is real value in its system function, as an updated control mechanism.<sup>111</sup> System mechanisms get outdated and must be changed or become irrelevant. Inflexible systems that are not capable of this type of internal change can break down and enter dangerous disequilibrium. Second, it illustrates a system governance commitment to change and prevention of future attacks. There were other major government responses to 9/11.

As a result of 9/11, the FBI switched its major focus to counterterrorism. FBI resources were switched away from the law enforcement mission to support its new counterterrorism emphasis. Additionally, on December 8<sup>th</sup>, 2005 the President created the Office of the Director National Intelligence (ODNI).<sup>112</sup> The ODNI is intended to rectify many bureaucratic challenges with the collection, analysis, and dissemination of national level intelligence. As a part of the DNI, the National Counter Terrorism Center (NCTC) was created. Its primary function is to integrate and analyze all intelligence pertaining to terrorism and counterterrorism. All of these changes had some practical value but there impact on longer term system dynamic equilibrium is unclear. Using the polling data discussed above shows mixed results for longer term impacts on government sub equilibrium.

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<sup>111</sup> Many critics have argued that DHS was unnecessary and a failure. They offer Hurricane Katrina response as evidence.

<sup>112</sup> Office of the Director of National Intelligence, "ODNI History," <http://www.dni.gov/aboutODNI/history.htm> (accessed 11 October 2007).

Prior to 9/11, voting and election data was a good indicator of trust or belief in the systems ability to self regulate. This trend increases after 9/11. All electoral indicators continue to rise into the 2004 elections. Agents within the system vote because they desire change and believe the existing system will work. Figure 15 shows the trends in four different voting indicators toward increased belief in the system. Registered voters, total percentage of voters, total percentage of registered voters who voted, and polling data all increased. We can infer from this that one impact of 9/11 was a stronger belief that the internal mechanism of government will work to create change.

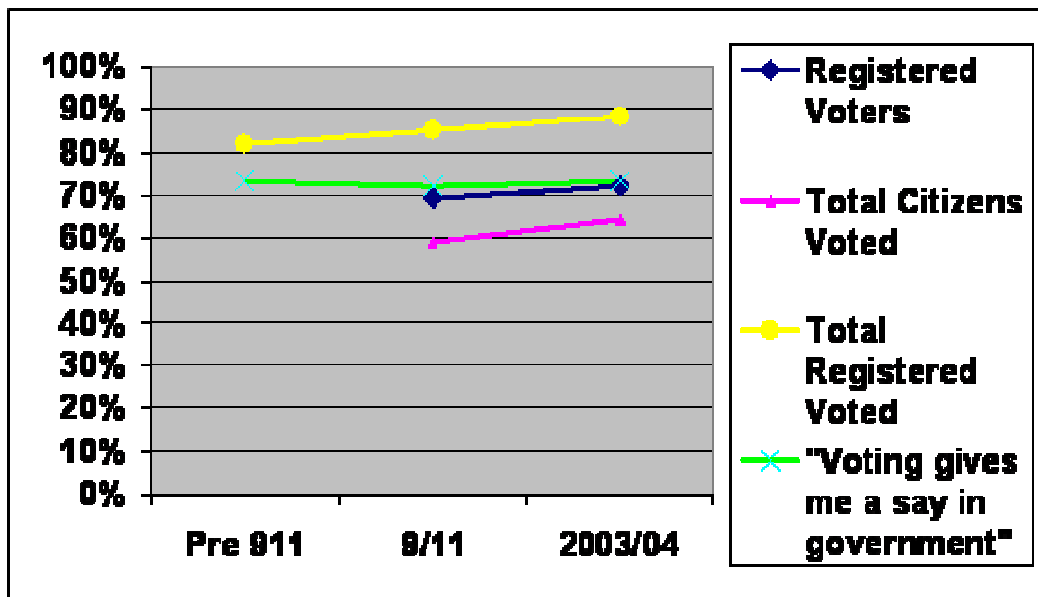
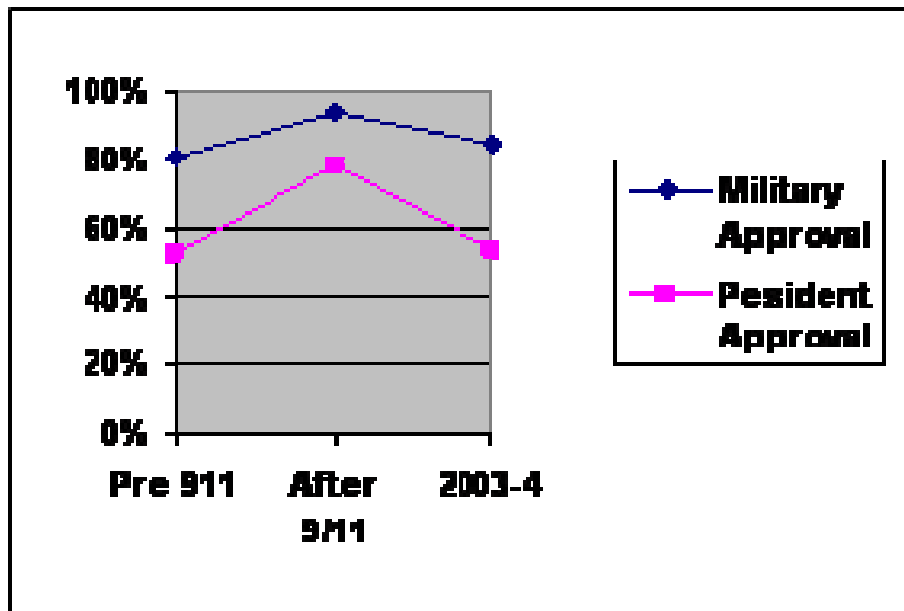


Figure 15. Voting and Poll Data Pre/11 through 2004

Although this data indicates an increased value-environment relationship for the electoral mechanisms of government, other data indicates a general decline in confidence for government sub systems. Public approval ratings for the President and the military dropped since their peak after 9/11. As of 2003, before the invasion of Iraq, the Presidential approval rating was still strong and the military approval rating was still

excellent but both had decreased.<sup>113</sup> This decrease may indicate a slight but increasing imbalance in the government sub equilibrium. Figure 16 shows graphically the post 9/11 spike of approval for both government mechanisms and then a return to almost identical pre 9/11 levels. We can hypothesize that an increase in government sub equilibrium occurred after 9/11 but is reversing itself as time passes. In this case, terrorism may have a *positive* short term impact on equilibrium but a long term negative impact.



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<sup>113</sup> The approval rating of President Bush is a contentious issue but if compared to other Presidential approval ratings throughout history, was high in 2003. Even today, his approval ratings have not dipped to the depths of President Carter or Nixon. Military approval ratings are still superb and indicate strong value support for certain government mechanisms.

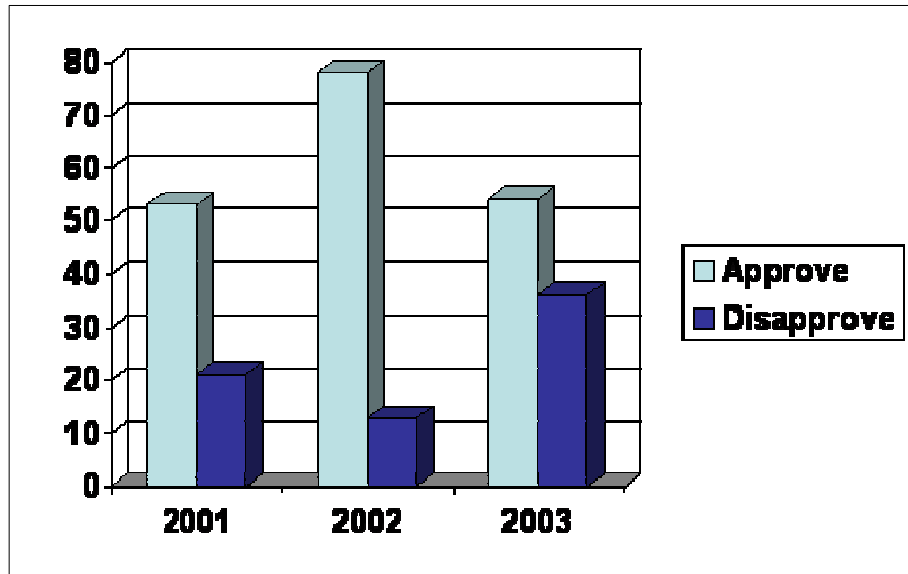


Figure 16. Presidential and Military Approval Ratings

Although this indicated a downward trend, Post 9/11 absolute mistrust of the government system is still amazingly low. Figure 17 illustrates the slightest increase in pure government mistrust. This change is extremely low but does illustrate that at least 4% of the population does not agree the government environment matches value expectations. Alone, this rise may be insignificant but combined with the other indicators may indicate an increase in disequilibrium. Still, the important take away from this data is that after a major crisis, 96% of the system still expects the government to at least sometimes do what is right. It appears that the sub equilibrium is well balance but in a slow and steady drift away from equilibrium. One final government data set will add to this conclusion.



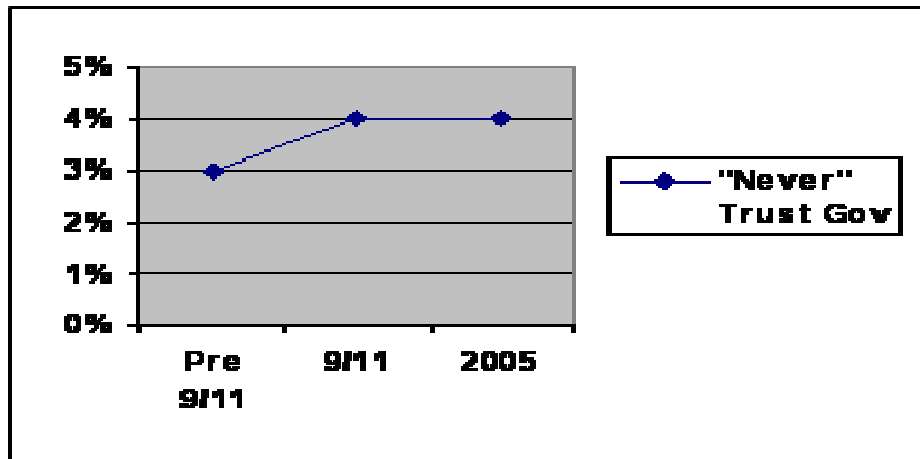


Figure 17. Government Distrust

Since October 2001, the Pew Center has been asking the important question “How well do you think the government is doing to reduce the threat of terrorism?” Figure 18 illustrates that only weeks after the 9/11 attacks, 86% of respondents felt that the government was doing either fairly well or very well. Some of this positive response may be a result of increased unity and patriotism after the attack. The specific percentage is not as important as the changes visible in the chart below. The response to this question steadily declined until it hit 69% in November of 2002.

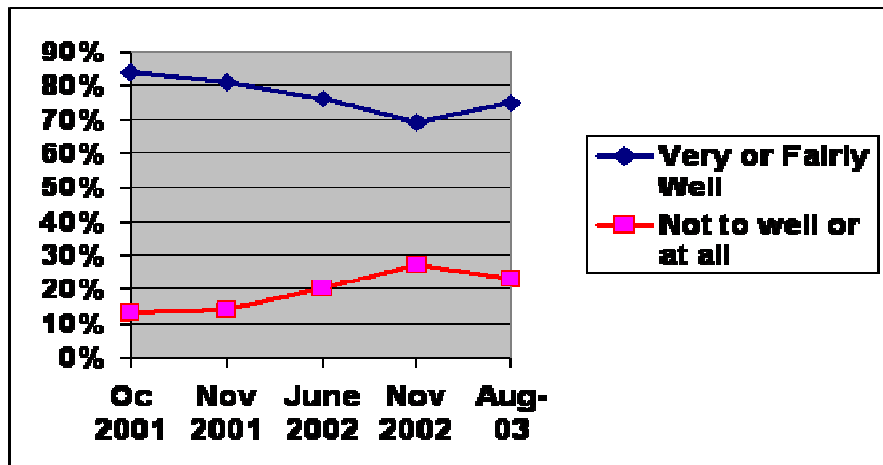


Figure 18. Government Progress to Reduce Terrorism

There were no additional domestic attacks against our system during that period. Therefore, we can posit that it was a combination of government policy inputs and a change in popular beliefs (value) that caused this decrease in value-environment balance. No additional polling data was available until August 2003. The invasion of Iraq began in Feb 2003 so the Aug 2003 data point is not being considered here for purposes of deciphering the impact of 9/11 on equilibrium but is interesting to note that it contributed to a positive upturn.

Overall, these indicators suggest a decrease in government sub equilibrium. Based on this data, government equilibrium for purposes of this analysis is assessed to have decreased by 10%.<sup>114</sup> This cancels out the post 9/11 gains and leaves the system at the approximate level of equilibrium as pre 9/11

**5. Impact of 9/11 on Government Sub-Equilibrium.** Overall, this analysis indicates an immediate move towards greater equilibrium immediately after 9/11 but a gradual increase in disequilibrium as time passed. The government sub equilibrium is not a measure of specific issues but instead a balance between the systems governmental value component and the governmental environment. In practical terms, it is a measure of how well the system components agree with the state and actions of government. This assessment is more about what the government is and how it acts on a much broader scale than just disagreement over specific issues. Overall, the government sub equilibrium is strongly equalized but as of 2003/2004 was experiencing a downward spell. 9/11 did not have drastic negative effects on the system but may have been the catalyst for a more gradual long term downward trend. This is important to consider in relation to Al Qaeda's' strategic, long term outlook.

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<sup>114</sup> This assessment is based on a return to pre 9/11 Presidential and military approval ratings, a decline in overall poll data by Nov 2002 that shows a 17% decrease in popular support for government counterterrorism efforts, but also a marginal increase in electoral confidence. The assessment of a 10% drop is subjective but well founded when data trend lines from multiple government mechanism are observed.

## **E. NATIONAL SECURITY SUB EQUILIBRIUM**

**1. National Security Sub Equilibrium.** This analysis treats the system's government and national security sub equilibrium differently. This section will assess whether Al Qaeda was successful in creating some level of disequilibrium between the system's national security value and the national security environment. Creating imbalance in this sub equilibrium could translate to changes in national security policy. Based on DETT, Al Qaeda has the ability to change American national security policy by making terrorist inputs to our system if they are successful in creating a value-environment imbalance.

This section does not use polling data to gauge the state of national security equilibrium. 9/11 essentially redefined modern national security. Any polling data prior to 9/11 would not reflect this change in a respondent's concept of what encompassed national security and therefore would not make for an accurate comparison.

**2. Pre 9/11 National Security Sub Equilibrium.** Pre 9/11 national security was largely focused on attacks against our overseas interests. Due to our superpower status, American national security was largely foreign activity to protect the system outside its geographic borders. This included economic, diplomatic and sometimes the use force to protect or further national interests. The major national security issues prior to 9/11 were containment of Saddam Hussein, nuclear proliferation in North Korea, and supporting the counter narcotic initiatives in Colombia. Terrorism was a national security issue but focused almost exclusively overseas. Foreign bases, embassies, and a warship had been the predominant terrorist target up until 2001. This was the most significant belief change of 9/11. National security on 10 September was significantly different than national security on 11 September.

Since the concept of national security was largely redefined, no empirical baseline can be easily assessed for later comparison. Therefore, an “average” equilibrium rating of 70 was assigned as a baseline for comparison. This value was assessed to show numerical change.<sup>115</sup>

**3. Immediate Impact of 9/11 on National Security Sub Equilibrium.** On 9/11, we were shocked to find that our geographic borders no longer protected us. 9/11 demonstrated that a group of religious radicals could use rudimentary tools to create significant domestic destruction. They had lived among us and used our own aircraft to attack three edifices of national strength. They had no air force, no armor divisions, and no known means of state warfare and yet they successfully killed over 3,000 people and brought the system to a halt for a few days. The pause we all felt on that day was the result of this momentary disequilibrium. Our collective concept of national security did not match the environment we lived in. This sub equilibrium went into immediate disequilibrium but was thankfully confined to single sub equilibrium and thus did not imbalance the entire system. The established mechanisms of national security had failed and were not sufficient to restore immediate balance. Our national security tools, policies, and 10 September practices were nearly irrelevant in the face of this new environment. Immediate systemic changes were needed to restore national security equilibrium. Since the national security system failed to work it is assessed a value of 1.<sup>116</sup> The specific value assessment is not as important as recognizing that equilibrium in this sub component was drastically reduced by 9/11.

The larger system response also included a values change that recognized national security now meant homeland security. The government reorganization of national security apparatuses and the invasion of Afghanistan were both results of this value shift.

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<sup>115</sup> The value 70 has no empirical grounding. This is a subjective rating based on the analyst’s own experiences. A value of 70 was chosen as an average number but has no meaning beyond implying that 70% of the population was satisfied with the national security environment pre 9/11.

<sup>116</sup> A more definitive quantitative study may not access a rating of 1 but is done here to indicate strong if not absolute value-environment break even if for short period of time. Additionally, it is done to chart the impact of a seriously deficient score and its impact on other, only moderately disequalized scores. Without data comparison to prove the assertion, it is simply fair to say there was a significant downward trend in system belief that the new national security sub system environment was acceptable.

**4. Lasting Effects on National Security Sub-Equilibrium.** Our failure to embrace this change in environment with a corresponding value shift prior to 9/11 seceded both physical and ideological ground to our opponents. 9/11 was an input that created a value-environment imbalance in the national security equilibrium so severe that it could not self regulate. The larger system was needed to make organization, function, and belief changes to restore it as a functioning sub system.

Immediately after 9/11 this sub equilibrium balance was restored and we redefined national security. The short term impacts of our national security changes were beneficial, as indicated throughout this chapter. However, the long term impact of these changes is still unknown. As of 2007 we have yet to kill or capture Osama Bin Laden, we invaded another nation state at the expense of finishing the job in Afghanistan, we are pursuing high dollar weaponry such as the F22, Joint Strike Fighters, a larger blue water navy, and repositioning forces in and around the Pacific. These indicators would suggest we are moving backwards into a pre 9/11 national security mindset.

**5. Effects on National Security Sub-Equilibrium.** The immediate impact of 9/11 on this sub equilibrium was drastic. 9/11 shocked the national security sub system because the reality of 9/11 clashed with how we viewed the world on 9/10. With the multitude of changes came a re equalization of this sub equilibrium. Table 7 below lists the assessed values for the national security equilibrium. Post 9/11 national security equilibrium is assessed as returning to 60.<sup>117</sup>

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<sup>117</sup> As discussed, the initial variable of 70 was assigned only for comparison. After 9/11 a complete failure in national security process to protect its citizenry resulted in disequilibrium. A post 9/11 assessment of 60 was assessed for two reasons. The system did rebound and in particular, strong domestic security action detailed here went a long way to reassure the public that the national security system was again functioning and the invasion of Afghanistan did have a practical impact of disrupting Al Qaeda operations that resulted in no additional domestic attacks up until the end of this assessment period. The assessment of 60 is not founded in a direct translation of data (polling or otherwise), but instead a fair assessment of public and thus system perception.

Table 7. National Security Assessment

Phase	Value (V)	Equilibrium (EQ)	Disequilibrium (DEQ)
	1-100	% Environment which equals Value (EQ=V/E)	
Pre 9/11	70	.70	.30
9/11	80	.01	.99
Post 9/11	60	.60	.40

Well into 2002 and 2003 there is significant national debate about the threat and the particulars of our new national security but it is relatively equalized. This momentary disequilibrium brought about many changes whose long term impacts are yet unclear.

#### **F. 9/11'S IMPACT ON SYSTEM**

On 9/11 the country paused. We can all recall the moment when the attack occurred and how we felt when we realized what had happened. The system was shocked. Although most of us were no where near the damage and not in any physical danger, the events clashed sharply with how we perceived the world. As individuals we were busy with emergency response, erecting a hasty defense, or simply glued to the news but without our knowing it; the system slowed, changed, and then resumed normal operations. 9/11 demonstrated that America is a remarkably equalized value-environment system. Change and fragmented values are inherent in the system but because of its flexibility and direct value feedback loop to the government, it proved to be remarkably equalized and responsive to disruption.

As we were glued to activities in New York, a field in Pennsylvania, and the Pentagon the system decreased in equilibrium but never entered true disequilibrium. This change in equilibrium spurred changes throughout the system; from individual concepts of national security, economic policy, to major government redesigns. The pace of

equilibrium decline was also a factor. It was not a slow steady fall. It was a drastic drop that shocked the system. The quantitative assessment of these equilibrium shifts has been plotted on a graph at Figure 19.

The economic equilibrium initially dropped but counter inputs began to slowly halt the increase in disequilibrium and start the move towards balance. The empiric assessment of the economic equilibrium before, during and after the crisis was 90, 80, and 85.<sup>118</sup> The government sub equilibrium was actually increased. Indicators show that a change in American values actually increased this equilibrium after 9/11. Government approval ratings and levels of patriotism were amazing although the population had much to blame its government for. However, this honeymoon was short lived and this equilibrium began losing value sometime in 2002/2003. The quantitative assessment was rated as 70, 80, and 70.<sup>119</sup> The overall drop in dynamic equilibrium was significant but only the national security sub equilibrium reached a level even close to disequilibrium. On 9/10 we believed the country was safe but instead we were proven to be vulnerable. 9/11 was a demonstration of capability and was followed by Al Qaeda promises of future attacks. Both of these inputs were at odds with how we believed national security should be. This analysis assessed that national security equilibrium prior to 9/11 was 70 but then dipped into disequilibrium which required major structural and functional changes to resolve. These changes resulted in a return of equilibrium to 60.

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<sup>118</sup> The particular method and data used to derive these assessments is detailed in the economic equilibrium section. This section of the analysis will deal with the graphing and overall analysis of total system change.

<sup>119</sup> The particular method and data used to derive these assessments is detailed in the government equilibrium section.

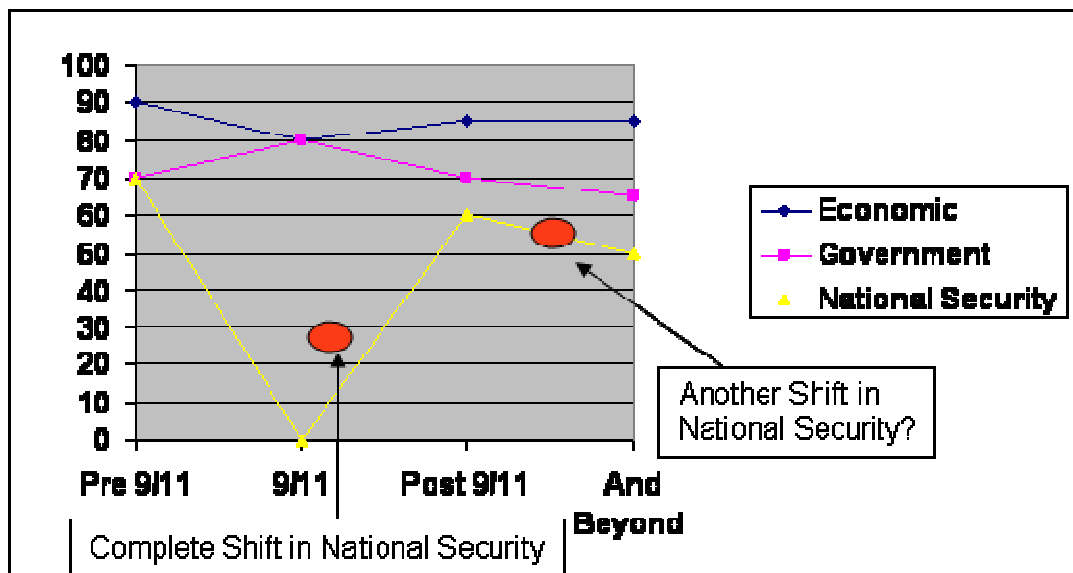


Figure 19. Sub Equilibrium Quantitative Assessment

The three analyzed sub equilibriums combine to form the larger system equilibrium. The total equilibrium was calculated by combining the three sub equilibrium at each phase as graphed at Figure 20. Pre 9/11 the average of economic, government and national security equilibrium results in a total equilibrium assessment of 77.<sup>120</sup> Immediately after 9/11, the average of the three sub equilibriums dipped to a low of 53. This assessment is heavily influenced by the assessment of disequilibrium within the national security sub equilibrium. The actual size of the dip is not as important to this thesis' question as the indication that there is a significant drop followed by significant social system changes. Throughout the process of these changes, a significant equilibrium rebound occurs. This total assessed rebound returns to a post 9/11 equilibrium assessment of 71. Economic data indicated a strong return to normalcy. Government indicators and poll show a return to almost identical pre 9/11 levels. As discussed above, the national security assessment of equilibrium was subjective but based on anecdotal evidence was assessed to have recovered to a 60. Most indicators

<sup>120</sup> Although the method to achieve this rating requires refinement for anything other than a general understanding and track of equilibrium, this number seems remarkably close to what you would expect. This assessment would indicate that 77% of the U.S. system on 10 September 2001 believed that its environment matched its values.



examined pointed to an almost complete return of the value-environment relationship by 2003.

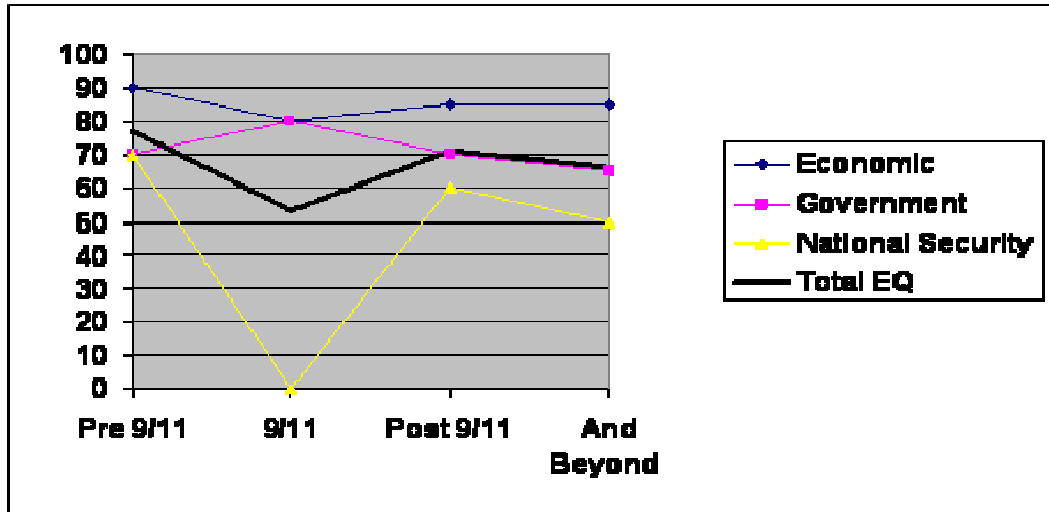


Figure 20. Impact of 9/11 on American Social System Equilibrium

The Iraq invasion in March of 2003 makes determining the long term impact of 9/11 and its responses a challenge that cannot be adequately addressed in this thesis. However, based on anecdotal evidence, Figure 8 includes a final data set of where we may be today. It is realistic to assume from the general national mood that all three of the sub equilibriums studied in this section have fallen.

This chapter attempted to measure and analyzes three system sub equilibriums to determine overall system equilibrium. These equilibriums were assigned a numeric value for purposes of charting their behavior over time. The actual assessments of equilibrium value were mostly based on data trends but the actual numerical assessment was not derived from a standard formula. These assessments were not intended to be definitive but only used to chart the general state of equilibrium.

The input of 9/11 was met with a pause and then a series of immediate and measured counter inputs that successfully moved the system back towards equilibrium. The system changed the environment and values. The government stressed that

additional attacks were imminent, thus inoculating the population in order to better absorb future attacks. It also took simultaneous actions to defend against future attacks and go after the exogenous actors. The American system was sufficiently flexible to absorb the value-environment mismatch and work to restore dynamic equilibrium. This process initially improved some sub equilibriums, improving the value-environment agreement to levels greater than 9/11. Most of these gains were short lived as most returned to or below pre 9/11 levels. Al Qaeda was successful at creating change. The long term success of this attack is not yet known and will continue to play out over time but significant changes occurred and the current equilibrium is lower than it was on 10 September 2001. There is a long term war, measured by inches and they are willing to wait.

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## **VI. CONCLUSIONS**

### **A. ORGANIZATION**

This final chapter includes a summary of ideas and final thoughts regarding this thesis' primary question. An answer to the prolific question of *how terrorism works* has been offered in this thesis and will be concluded in this final chapter. This conclusion reviews three main topics; Al Qaeda, terrorism theory, and the dynamic equilibrium theory of terrorism. This conclusion also includes a short discussion of existing counterarguments, areas for future research, and policy implications.

### **B. SUMMARY AND POLICY IMPLICATIONS**

**1. Al Qaeda.** 9/11 served as a wake-up call, but cost the United States 3,043 dead in the process. Prior to that day, we had little understanding of Al Qaeda or what they wanted to achieve. Since then we have a much better understanding of the enemy and their objectives but still struggle to understand how terrorism may or may not help them achieve those objectives.

We now know that hard line Al Qaeda members will stop at nothing to achieve their objectives. We also know that Al Qaeda is not just a terrorist group; it is the vanguard of a global Islamist insurgency bent on social, political, and religious change. These insurgents are targeting us, in part, because our country and its policies are an obstacle to their goals.

Al Qaeda is a violent predatory system bound together by a core ideology in pursuit of a unified objective. Viewing Al Qaeda as a system can help us to understand its lifecycle of growth, maturation, operation, and ultimately death. This system outputs violence and radical Islamist ideology. These deadly outputs are not arbitrary but instead focused on achieving strategic goals that include nothing short of total social-religious change. They intend to implement global Salafist rule and will kill or be killed to achieve this objective. The first phase of their campaign was regional (the "near enemy") but

includes attacks against America (the “far enemy”). They hope to coerce American policy in the Middle East primarily by disrupting our economy. They expect by attacking our economic interests, the American population will demand a complete withdrawal from the Middle East. 9/11 demonstrated that they are more capable of achieving this objective than any western expert could have postulated.

Given this situation; a clear understanding of their system, objectives, and methods are critical to our success in defeating them. Al Qaeda’s primary tactic to achieve their strategic objective is the use of terrorism.

**2. Terrorism.** Significant time, energy, and resources have been devoted to understanding terrorism. Unfortunately, there are still many important questions unanswered. This thesis’ primary question was *how terrorism works*, and the thesis attempted to answer this question through the use of social system equilibrium theory. The thesis builds on a body of previous research and theory.

Much of this existing theory explains terrorism as an illegal use, or threat, of violence to coerce political change. Terrorism generates fear and is thus inherently coercive. Our response to terrorism is often based on a fear of future attacks. Terrorism generates fear far beyond its immediate victims. It is a communicative tool in which a single attack can simultaneously serve the specific act of destruction, coerce a target audience, and act to propagate a message. It is “performance violence” because of its often symbolic, dramatic, and theatrical nature.<sup>121</sup> As both theater and communication, these violent dramas are intended to attack the popular sense of normalcy and morality. In some cases, the physical destruction caused by terrorism is of secondary importance to the message it sends.

Like other means of warfare, the form and purpose of terrorism has evolved. Historically, terrorism has evolved in waves intimately linked to the political and social situation of its time.<sup>122</sup> These waves of terrorism assumed a personality based on the politics and technology of the period. As the social political and technological landscape

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<sup>121</sup> Juergensmeyer, 127.

<sup>122</sup> Rapoport, 46-73.

changed, violent activists adapted the use and means of terrorism to keep it effective. We cannot defeat or destroy terrorism but we can make it an ineffective tactic and thus significantly limit its use. Current theory offers us little if we hope to move in this direction.

Current theory does offer explanations of how terrorism works amongst specific groups, countries, and within specific conflicts but a broader more holistic explanation of terrorism is missing. Systems theory has been used with some success towards this larger explanation and was adopted throughout this thesis. This thesis endeavored to explain how terrorism works at the system level and thus facilitate an understanding of its use across different environments, various situations, and over long periods of time. This level of terrorism understanding is the first step to making it an obsolete weapon. The dynamic equilibrium theory of terrorism offered in this thesis is a step towards this objective. Only after we understand the broader theoretical problem of terrorism can we begin to defeat it or mitigate its use in a meaningful strategic way.

**3. Dynamic Equilibrium Theory of Terrorism (DETT).** DETT is a framework for understanding how terrorism works. Terrorism is a unique political weapon because it targets a social system's equilibrium in order to force change.

Since DETT is rooted in system and sociology theory, this thesis spent significant time exploring existing ideas in these different fields of study in order to lay the ground work upon which DETT is formulated. Terrorist groups and societies were examined as systems. Understanding terrorist groups as systems can help identify how they operate and thus how to more effectively fight them. Examining society as a system is also necessary to understand how terrorism works to stimulate social change.

Society was analyzed as a complex living system. A simple yet instructive social system model was adopted that views society as consisting of two primary components; value and environment. The environment consists of all physical elements of the system while the value component includes the mental and emotional components. These two primary components exist in a homeostatic balance. Like all living systems, society is characterized by openness and dynamic equilibrium.

This thesis described dynamic equilibrium as the inherent characteristic of social systems to balance the value and environment components of the system. This homeostatic process keeps the system functioning at a normal level. Fluctuations in this balance are normal and healthy as long as they stay within a certain operating range.

Although their particulars differ, all living systems are subject to this balance of forces or property of dynamic equilibrium. This process is necessary to manage the constant input of energy necessary to battle entropy and thus sustain life. Due to this process, social systems are characterized by constant change, imbalance, change, and balance. Due to this homeostatic process, disruptions in equilibrium tend to stimulate changes that are intended to restore balance. This is a normal process but can be induced for nefarious purposes.

We discussed true equilibrium as a complete parity of forces which is not possible in its truest sense. We used the term equilibrium to describe a continuum of balance. The term disequilibrium is used in this thesis to represent some move towards imbalance, a trend towards disequilibrium while not necessarily meaning a complete imbalance or true disequilibrium. Disequilibrium is a state of extreme value-environment imbalance that can not be regulated by the existing mechanisms of a social system.

As an open system, society is subject to both exogenous and endogenous inputs. The normal functioning of a social system includes this routine and constant reception and processing of internal and external inputs. Most of these inputs are routine and lead to a constant but peaceful input-balance process. This process of dynamic equilibrium is how societies change. Governments and politics are system mechanisms created to control this process and the overall maintenance of the system.

This thesis highlighted that change via this normal process tends to be slow, measured, and can be thought of as social evolution. Each system is unique and its mechanisms that handle the process of change are different. Some systems are very open while others are relatively closed. Some systems are extremely flexible and others are more fragile. Likewise, some systems can handle many inputs and process them quickly while others may become easily overwhelmed. When the process of dynamic

equilibrium cannot effectively maintain a balance between the value and environment, systems may become dysfunctional. The closer to disequilibrium a system becomes, the more system pressure builds and is exerted to spur change. The greater the pressure, the more likely change will be radical and potentially violent. When a system ceases to function properly and can no longer continue this equalizing process, it is considered to be in disequilibrium.

Therefore, inputs made to the system from outside its boundaries could be aimed at specifically disrupting dynamic equilibrium in order to force changes in the system. Inputs that disrupt the value-environment relationship could have this effect. A value input that causes a system to disagree with its environment or vice versa would trigger change. Terrorism is one such input.

DETT hypothesizes that terrorism is a violent input to the environment at immediate and recognizable odds with a system's values and as such decreases the level of equilibrium between the two. When some level of disequilibrium exists, changes occur in an effort to restore value-environment equilibrium. Therefore, DETT posits that terrorism has the capacity to induce political/social change by targeting social system equilibrium. Terrorism is a unique form of political violence because it is a violent act that clashes sharply with the systems beliefs. Other forms of violence such as crime or protests may be illegal but are not so dramatically at odds with the value component.

Understanding why defining terrorism has been such a subjective endeavor is now easier given this DETT framework. It is a violent act that is at dramatic odds with a system's value, but in systems with fragmented value components... not all agents of the system will see or feel the same disequalizing effect from the act.

Terrorism is communicative not because of the horrific act of destruction or increased media coverage but because the impact on equilibrium reverberates throughout the system. The act of physical destruction is not the primary target, the system equilibrium is. Therefore, terrorism has far reaching effects on the system and its psyche than other forms of violence do not. The wider the audience, the greater the impact will



be on the system. For this reason, increased media attention and the proliferation of world wide instantaneous communication have intensified effects of terrorism on both the targeted system and adjacent systems.

Terrorism appears to be increasingly violent and destructive. If DETT is valid, increased violence could be a symptom, not of increasing ferocity, but a hardening of our system's value component. As our values change overtime, so does the input necessary to create a value-environment mismatch. Violence once thought to be at odds with our beliefs is now common place or at least to some degree accepted. The brutality of terrorists may be changing because more drastic and deadly levels of violence are needed to elicit a change in dynamic equilibrium.

If this input of terrorism moves the system too far out of equilibrium, true disequilibrium may occur. A state of true disequilibrium exists when the system cannot function using its existing structure or organization to restore normal operations. In this situation, the mechanisms that normally govern change are no longer adequate to equalize the system. If a system recovers from disequilibrium it will result in structural or functional changes that create a fundamentally different system. As the system becomes more and more dysfunctional, pressure for change builds. If balance is not restored, more extreme forms of change are likely. These extreme forms of change will most likely include violence and terrorism. Therefore, terrorism can create disequilibrium while disequilibrium is likely to be associated with more terrorism. It is for this reason that terrorism is frequently, if not always associated with revolution.

Therefore, based on these DETT concepts, government counterterrorism policy must be especially mindful of system dynamic equilibrium. Terrorism creates some degree of disequilibrium in an attempt to force change. Counterterrorism policy therefore must not only focus on inhibiting these dangerous inputs but also equalizing the system. Counterterrorism policies that serve to stymie the terrorist actor but further the enemy's objectives within our own system are counterproductive and ultimately self defeating.

Terrorism works to spur changes in social systems but rarely achieves its intended objectives. The immediate and observable impact of terrorism may lead its users to believe it is effective but they also fail to see its use in system terms. Each system is unique and will react to similar inputs of terrorism in very different ways. This is why terrorism may appear to have worked in some conflicts or causes but failed miserably in others. Analysts desperately search for variables among these conflicts that would indicate why terrorism achieves such seemingly sporadic success. The answer to this quandary is not in the analysis of terrorism but in the system it targeted. Ultimately, the system as a whole (not just the government mechanism) is in control of its collective response to terrorism. System changes will most likely occur as a result of terrorism but only rarely will they be changes that the terrorist desires.

The system components ultimately control their own response to disequalizing inputs. An understanding of this process and a self awareness of its own value-environment state can improve its self maintenance. Although simplistic, the population of a democratic society ultimately determines the effect of terrorism. The terrorist input of 9/11 disrupted American system equilibrium and spurred changes throughout the system. This thesis briefly examined the impact on economic, government, and national security equilibriums. The impact on each of these was different but fed into the total system equilibrium. The system was negatively impacted by 9/11 but within a short time restored itself to an almost exact pre 9/11 level of value-environment agreement. However, since that return of balance, we are seeing a slow but steady decline in the system's equilibrium. Anecdotal evidence suggests that 9/11 was a catalyst for change that we corrected but our own responses to 9/11 are now having diminishing returns.

Terrorism would become an obsolete tactic or strategy of warfare if it was no longer capable of eliciting system change. The initial value-environment shock cannot be avoided but the systems response can be. Consider a future in which acts of terrorism no longer work. Terrorism is deterred because it no longer spurs change. Imagine a future in which an airline hijacking does not cause public fear but instead causes a rush on airline tickets the next day. Hijacking would no longer be a viable tactic. Envision an attack on Wall Street that doesn't elicit financial panic... but instead a massive rush of

investment accompanied by record profits. Al Qaeda attacks a mall on Saturday and on Sunday the malls across America are packed with defiance. These are system responses within our control. What power would Al Qaeda have to achieve any of its objectives if we better understood our own system, its equilibrium, and its response to terror attacks?

**4. Final Thoughts of Policy.** Terrorism theory is an important pursuit but has limited practical use unless it is used to develop policy. The ideas, arguments, and analysis presented throughout this thesis have minimal immediate impact for the country's agents, detectives, or soldiers fighting on the front lines of this war. But the tactics, objectives, and strategies of these war fighters should be based in policy, rooted in accurate theory.

DETT can be used as a framework, not necessarily to make immediate decisions but to view how terrorism impacts social systems at different levels. This systems approach is most valuable to determine the long term impact of both terrorism and counterterrorism policies. The actual acts of terror do very little damage to the overall system. The real power of terrorism is in our own reaction to it. Counterterrorism policies that create greater disequilibrium than the actual attack are not effective policies.

## **C. FLAWS AND COUNTERARGUMENTS**

This thesis was a vehicle to explore certain system, social, and terrorism issues but its author fully recognizes there are theoretical and substantive holes throughout. The subject is broad and incorporates a host of specialties and sub specialties that could not be wholly explored in the preparation of this document. That said, an honest effort was made to address some of the immediate challenges with an upfront understanding that not all counterarguments could be addressed here in this short paper. The following is a short explanation of possible flaws and counterarguments to the ideas expressed in this thesis.

**1. Closer study of Social Factors, Values, Culture.** This thesis only quickly covered some of the social science concepts that could play into the value component. A closer analysis is necessary that examines the larger body of social science work in this area. This could lead to a clearer definition of value using existing academic standards and research. Although the author stands by his classifications of

value as a basis for DETT, it is recognized that additional work would be useful regarding the notion of a single system value component.

**2. Defining Equilibrium and Disequilibrium.** Chapter III and IV both went to some length to outline the existing theory, definitions and some counterarguments against the use of equilibrium theory. Past debates were immediately obvious regarding the use and usefulness of the terms. Still, the argument that society does not exist in a balance or any type of equilibrium (as we have asserted here) is acknowledged as a counterargument. The definitions applied to these terms are critically important to a reader's acceptance of the ideas proffered in this paper. If the reader simply disagrees with these fundamental concepts at the onset, the remainder of this work remains on notably shaky ground.

**3. Value Fragmentation and Conflict Theory.** The notion of a fragmented or at least diverse value component was only superficially addressed in this thesis. It acknowledges that diversity is inherent and can lead to conflict within a system. However, the author is not completely satisfied with this explanation and feels it is an area for additional thought and research. Although, this work stands by its arguments regarding value and conflict theory, it recognizes that there is a much more complex relationship between a fragmented value component and conflict (or terrorism) than is explored here. This may be an area for additional study but the central question of this thesis was not to address the causes of terrorism; but instead how terrorism impacts societies and thus how it works to spur change.

**4. What is the Practical Application of DETT?** As a student of terrorism and a practitioner of combating terrorism policy, the author knows full well that theories are only valid if they have some practical value. DETT and many of the ideas introduced in this thesis are abstract and esoteric. They may seem irrelevant or impractical in a time when we are desperately fighting to protect ourselves and hunt down Al Qaeda. During times like this, theory takes a back-seat to putting shooters where and when they need be. Progress today is measured in days without an attack, enemy operatives captured/killed, and the pace of reconstruction... not in state of equilibrium. However, policy must start somewhere. Good policy is rooted in good theory about how the world works, not on the

conflict of the moment. Policies that do not consider the larger system are in danger of being more harmful than the enemy. DETT is offered as a framework for academic debate and policy rumination, not for those mounting-up for tomorrows patrol.

#### **D. FUTURE RESEARCH**

**1. Warfare and the Value-Environment Construct.** The author was exposed to this construct while studying revolutionary war. In the research process of this thesis, several sources were found to use or eluded to this simple yet powerful construct. However, no specific work was found that explored this notion and war.<sup>123</sup> These seemed to be a powerful and insightful systems approach to the world that has implications far beyond terrorism and revolution. One specific area for future research is the impact of these ideas on warfare and interstate conflict. Although war is often accepted in modern society, it tends to be constrained by this value-environment relationship. State war in particular is conducted based on a codified set of values such as treaties, international law, laws of war, and rules of engagement. These constraints are presumably based on a system's values. When war drifts beyond these system imposed limits, accusations of war crimes, unjust war, or even terrorism may arise. Expanding the use of this construct to understand the constraints of war and conflict in general would be a useful future project.

**2. Defining and Measuring Equilibrium.** This thesis made an initial attempt to define, measure, and chart the changes in equilibrium after 9/11. DETT set out a basic premise for understanding terrorism and in doing so identified a useful approach to measuring equilibrium. This was done to demonstrate the utility of DETT as a mental framework. Although this was useful, the level and clarity of equilibrium analysis was nowhere near sufficient to begin measuring, tracking, and predicting value-environment balance in a complete social system. Future research could focus on precise metrics for measuring equilibrium. The first step would be a detailed categorization and measurement criteria for both values and environment. With these measurements in

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<sup>123</sup> If such a work exists it was not found given the research tools available to the author in the time constraints of this short yet intense degree program.

place, a more precise equation could be developed to determine changes in equilibrium and limits of disequilibrium. Although difficult, this could prove to be a significant advance in multiple fields study.

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